SPECIAL TOOLS
AND
SHOP EQUIPMENT

1937

PACKARD
MOTOR CAR CO.
SERVICE DEPT.

PACKARD

SPECIAL TOOLS
AND
SHOP EQUIPMENT

The best mechanic in the world cannot do good work without the right kind of Tools and Modern Shop Equipment

The purpose of this department is to assist you in rendering BETTER PACKARD SERVICE.

ISSUED BY SERVICE DEPARTMENT
PACKARD MOTOR CAR COMPANY
April, 1939

Printed in U. S. A.

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ORDER SPECIAL TOOLS

ON

VTA 19C PARTS ORDER FORMS

Use separate form and do not include Parts or Accessories on same order. For information on Tools or suggestions for additional Tools, write "Special Tool Department"

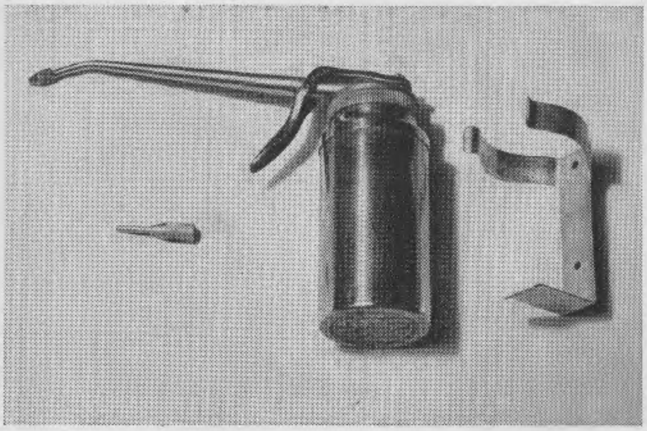
All Prices Listed are subject to change without notice.

The tools and equipment shown in this catalog have been tested by the Special Tool Department. There are other manufacturers whose equipment may be equally satisfactory.

Our facilities will not permit us to try out all types and makes of equipment. The items shown have been tested and, we feel, properly perform the function for which they are designed.

BODY

Body Cement Gun



Tool No. S. T. 968

Single Nozzle Tip—Extra

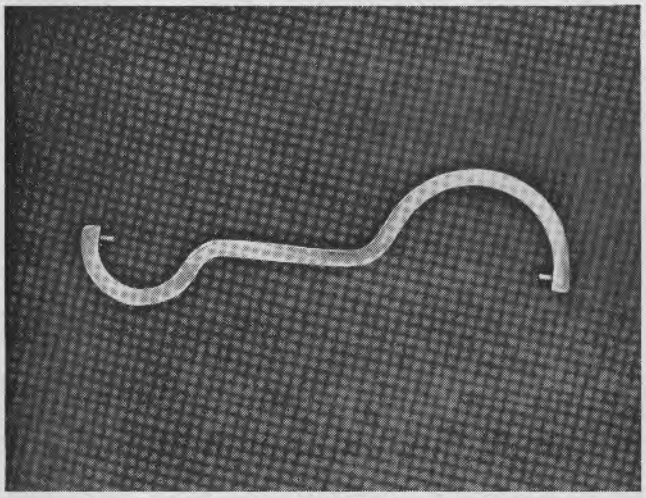
Tool No. S. T. 971

This is a heavy-duty force feed body cement gun that has a capacity of six ounces. The assembly can be easily taken apart for cleaning. It is recommended for all lighter cements used in body and windshield work.

It is furnished with a special extra single nozzle tip with a long and tapering end making the application of cement under windshield rubber an easy and clean job.

Included with the gun is a wall bracket to hold the gun.

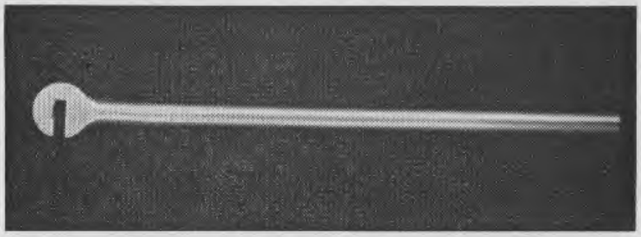
Inside Door Handle Spanner Wrench



Tool No. S. T. 829—Models 901-902-903-904-905-906-1001-4-1100-5-1200-8-1400-8 1500-8

This spanner wrench is used for removing and replacing inside door lock handles. This wrench will increase the efficiency and eliminate damage to the part.

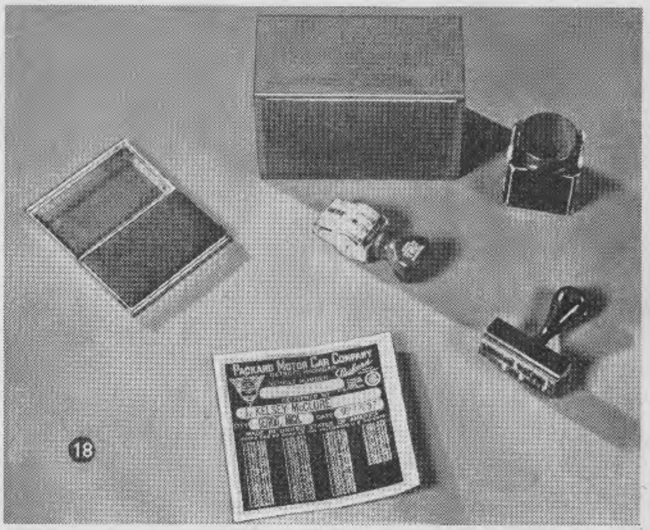
Door Hinge Bending Bar



Tool No. S. T. 5080—Models 120-120B-120C-115C-1500-1508-1600-1-3-8

If the doors do not line up properly because of being out at the bottom or at the top, they may be sprung into place. Refer to body section of Shop Manual for instructions.

Vehicle Stamp Set



Part Number	Name
S. T. 1461	Rubber Stamp with dealer's name and address
S. T. 1462	Rubber Dater
S. T. 1463	"Flash Dry" Ink
S. T. 1464	Pad
S. T. 1468	Special Lacquer
S. T. 1465	Wood Box
S. T. 2000	Complete Set

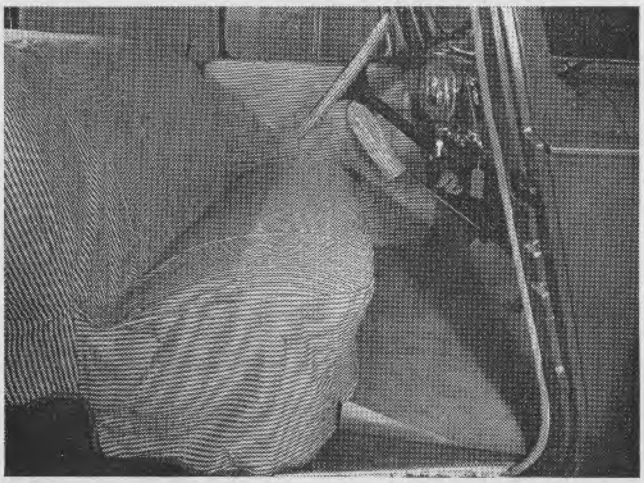
It is necessary, after stamping the distributer's or dealer's name and date on the vehicle plate, to protect it by coating with special clear synthetic lacquer.

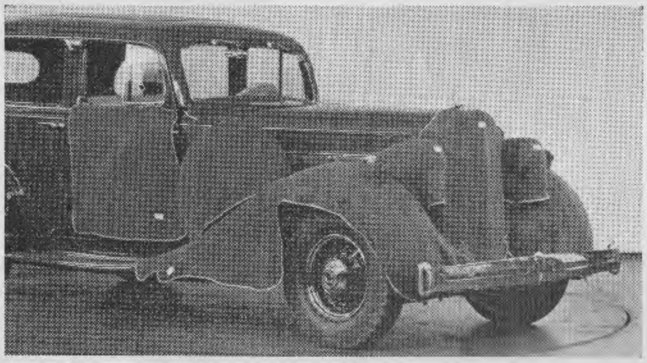
If you have a rubber stamp S. T. 2000 you can use it by ordering the special ink, lacquer and rubber dater.

When ordering be sure to give correct firm name.

BODY

Car Covers

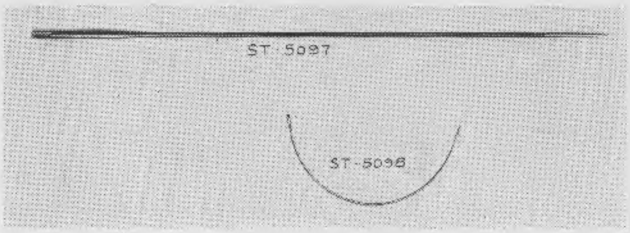




Tool No. S. T. 5009—Fender Covers—120-120B-120C-115C
Tool No. S. T. 130—Fender Covers
Tool No. S. T. 148—Cowl Cover
Tool No. S. T. 5064—Cowl Cover—120-120B-120C-115C
Tool No. S. T. 146—Door Cover
Tool No. S. T. 144—Front Seat Cover
Tool No. S. T. 357—Radiator Cover
Tool No. S. T. 149—Steering Wheel Cover
Tool No. S. T. 150—Change Speed Lever Cover
Tool No. S. T. 358—Side Wheel Cover
Tool No. S. T. 5063—Side Wheel Cover—120-120B-120C-115C
Tool No. S. T. 834—Headlight Cover
Tool No. S. T. 5062—Headlight Cover—120-120B-120C-115C

Sets of inside and outside covers are a necessity in the modern service shop. Their use results in better satisfied owners. They enable the mechanic to do better work, as he does not have to worry about scratching the car, or getting grease on the upholstery. The inside covers are especially tailored to fit and are of a closely woven material. The outside covers are heavy and are underlined in fleece to prevent scratching. Both inside and outside covers can be easily laundered.

Upholstery Button Fastener—Curved Needle

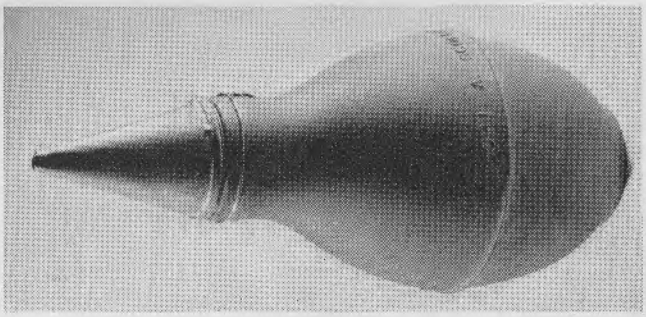


Tool No. S. T. 5097
Tool No. S. T. 5098

This jiffy needle is 17″ long and is used to install buttons to the seat backs and cushions. The needle is pushed through the cushion padding far enough so that the button hold down tape fastener can be attached to the end of the jiffy needle. Pull it through the cushion, and then insert the button fastener to the button band.

This special 10″ curved needle is used for sewing the buttons on to the lower part of the cushion on the Twelfth Series Models. It is impossible to sew these buttons on without a needle of this kind.

Flock Liner For Trunk Compartments

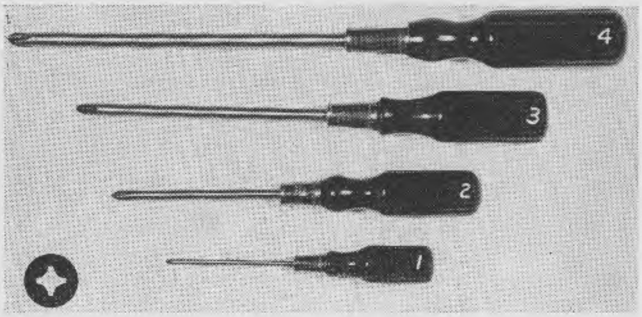


Tool No. S. T. 5131

"Flock" is the name of the material now being sprayed in trunk compartments of Seventeenth Series cars. This may be damaged due to luggage shifting in the compartment. To repair this we are now listing a Flock gun.

The proper way to use this is as follows: Paint the damaged surface with synthetic varnish or other adhesive, fill the bulb one-half to three-quarters full of Flock and squeeze the bulb well, forcing the Flock into the wet surface of the adhesive. This makes a satisfactory job.

Screwdrivers (Phillips)



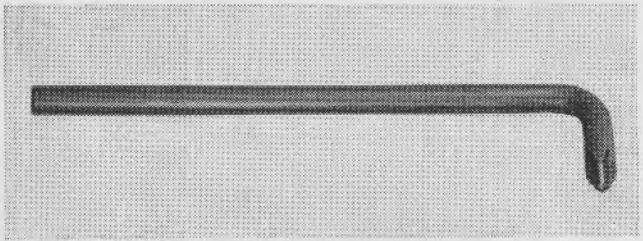
Tool No. S. T. 2007

Our cars are now equipped with a special Phillips screw, as shown in the illustration. It is necessary to have special screwdrivers to loosen and tighten these.

We are offering a set under ST-2007. This will take care of the entire range of these screws used. There are four screwdrivers in the set.

	Length	Diameter	Phillips Screws
No. 1	3"	9/64"	No. 4 and smaller
No. 2	4"	1/4"	No. 5 to No. 9 inc.
No. 3	6"	5/16"	No. 10 to No. 16 inc.
No. 4	8"	3/8"	No. 18 and larger

Door Hinge (Phillips) Offset Screw Driver



Tool No. S. T. 5121

The screws holding the front door hinge are so located that you cannot get at them with a straight Phillips screw driver. It is necessary to have a Phillips offset screw driver to tighten or loosen door hinge screws.

A screw driver of this type will more than pay for itself the first time you use it.

Graphite Lubricating Gun

Tool No. S. T. 931

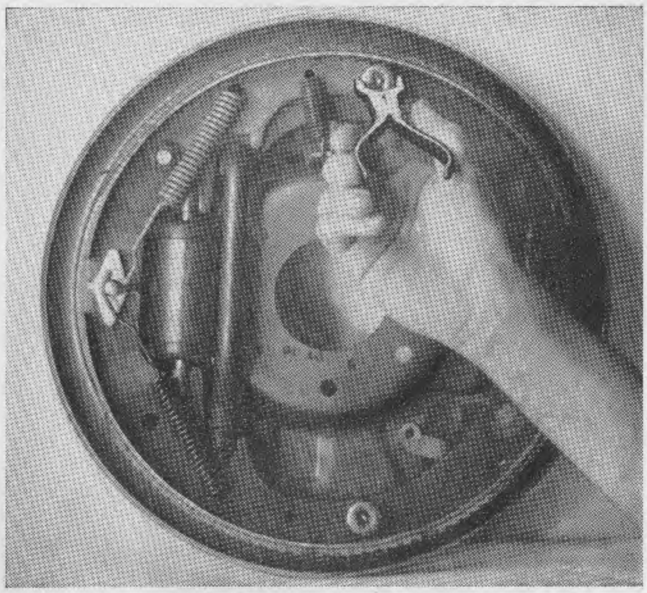
This is made of hard rubber and filled with a fine powdered FLAKE graphite. The flow of graphite is controlled by the adjustable nozzle, and the amount of flow is clearly indicated on the top of the gun. This delicately controlled graphite is carried by air and deposited where it is needed. It is not affected by the weather, therefore, it is the finest thing that can be used for lubricating the door locks as the graphite will not freeze. It is also good for springs, hood lacings, squeaky floor boards, window channels, and any number of different places.

These guns come filled ready for use. The refills consist of a special easy-pour can equipped with chute, and contains enough graphite to fill the gun about four times. There is also a small burnisher in the bottom of the gun which can be snapped in and out of place.

We believe that a trial will convince anyone who may be skeptical about its many uses. It saves labor and can be used back of the upholstering, and any spots left can be removed with an ordinary cleaner or gasoline.

BRAKES

Brake Shoe Spring Cup Lock Pliers

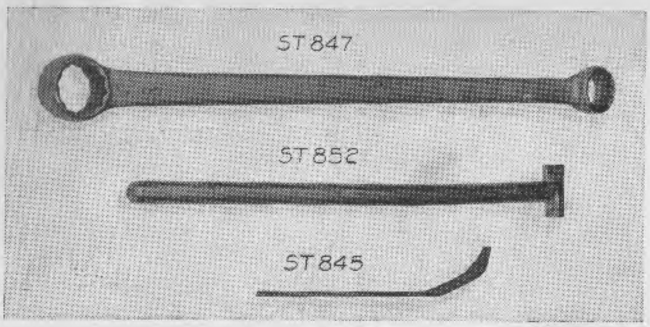


Tool No. S. T. 5077—Hydraulic Brakes

With this plier, you can remove the hydraulic brake shoe spring cup lock in a jiffy. Simply grip with the end of the plier the cap on the stud that comes through the brake shoe which has a spring lock. Give one-quarter turn and the lock is released.

This tool prevents injury from flying springs and loss of parts.

Brake Adjusting Tools



All Models

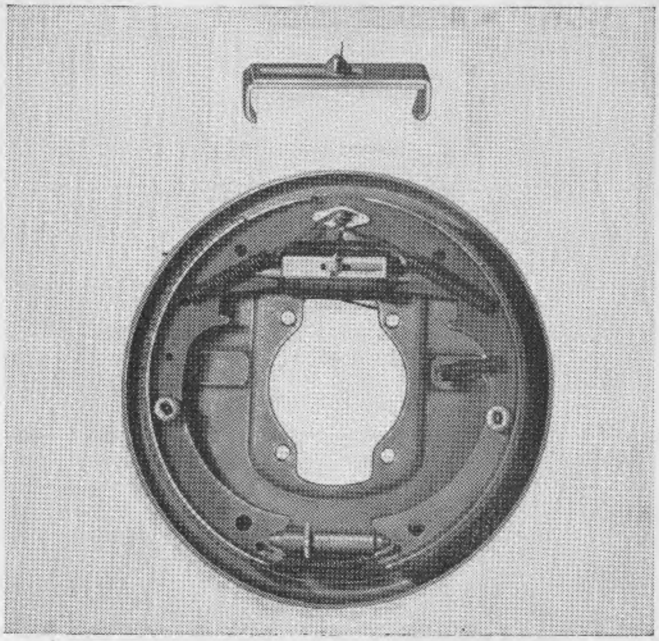
S. T. 847	**Brake Anchor Bolt Wrench—16 inch**
S. T. 845	**Brake Adjusting Screw Wrench**
S. T. 852	**Brake Anchor Pin Adjusting Tool**

The S. T. 847 is a 16 inch wrench for tightening brake anchor bolts. You need a wrench of this length to properly tighten anchor bolts.

S. T. 845 is a wrench used for turning the Adjusting Screw to get the proper clearance between the brake shoes and drum. You will find it much quicker than a screw driver.

S. T. 852 is an offset screw driver for holding the anchor bolt while tightening the anchor bolt nut.

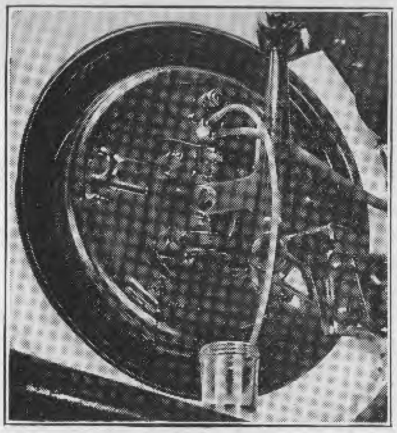
Brake Wheel Cylinder Piston Clamp



Tool No. S. T. 5047 (Set of 4 must be used)
Models—Hydraulic Brakes

This tool is clamped over hydraulic piston before removing brake shoes, and prevents spending unnecessary time in bleeding the brake lines. It holds the piston in place when relining brakes and also saves the loss of brake fluid.

Bal-Check Hydraulic Brake Bleeder

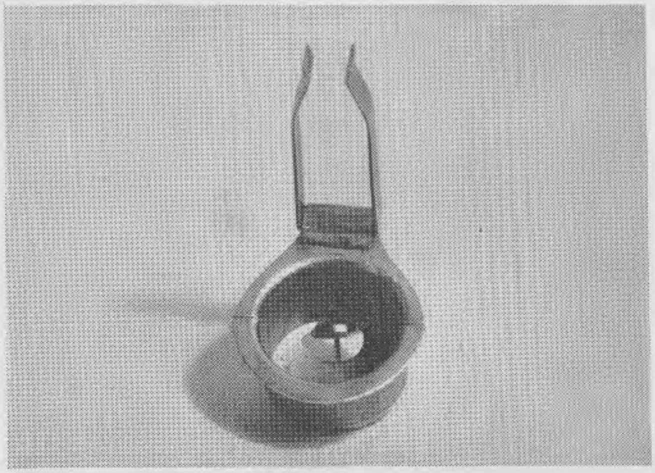


Tool No. S. T. 5118

With the four new Bal-Checks one man can bleed an entire set of brakes instead of the two men required at the present time as it is not necessary to watch the air come through the liquid which is in the container. By pressing the brake pedal five or six times you replace all the liquid between the master and brake cylinder and then all the air should be eliminated from the line.

See service letter Vol. 12, No. 22.

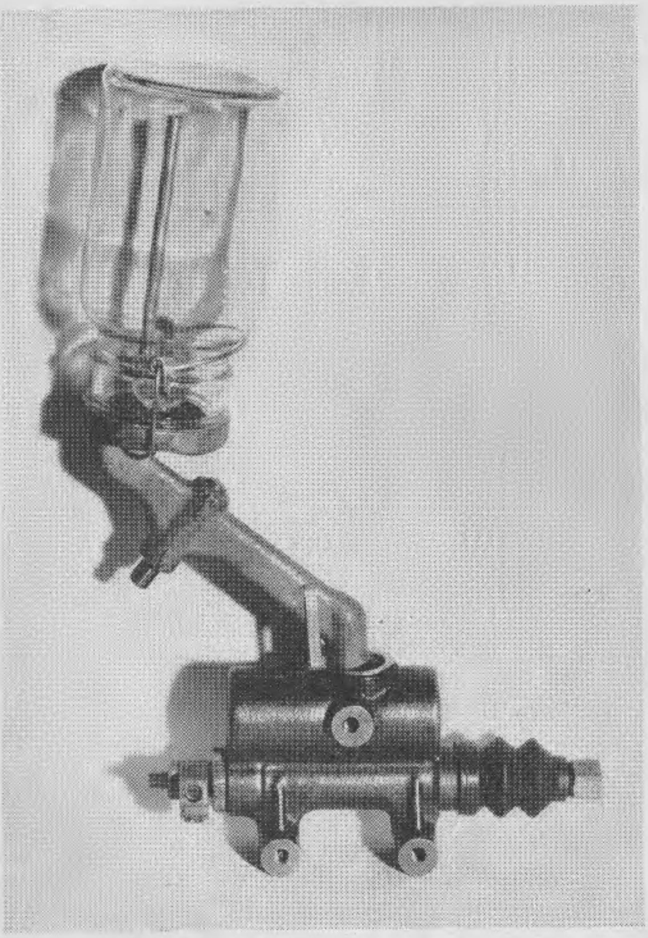
Brake Master Cylinder Refiller Holder



Tool No. S. T. 5108

Place the holder in the master cylinder filler hole in the top of the master cylinder. They snap firmly onto the refiller nozzle. The holder holds the refiller upright allowing the mechanic to do other work.

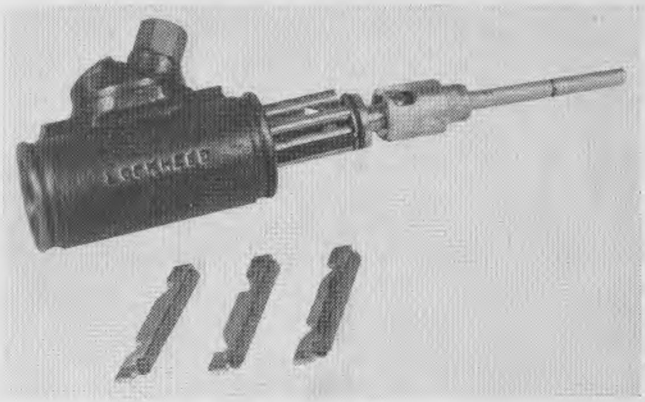
Brake Master Cylinder Refiller



Tool No. S. T. 5010—Hydraulic Brakes

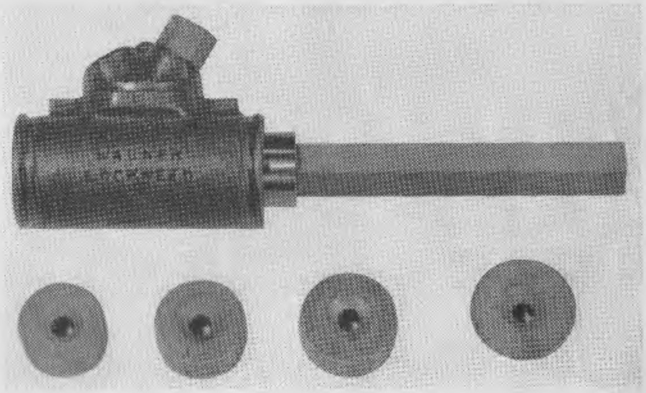
This tool makes the job of filling the master brake cylinder as short and simple as adding oil to the crankcase. Being fully automatic, it shuts off when the master brake cylinder is filled to the proper level and does not waste the brake fluid.

Brake Wheel and Master Cylinder Hone



Tool No. S. T. 5136

"No Go" Plug Gauge for Brake Wheel and Master Cylinders (Set Five)



Tool No. S. T. 5137

Hydraulic brake action depends upon smooth operation of the brake pistons.

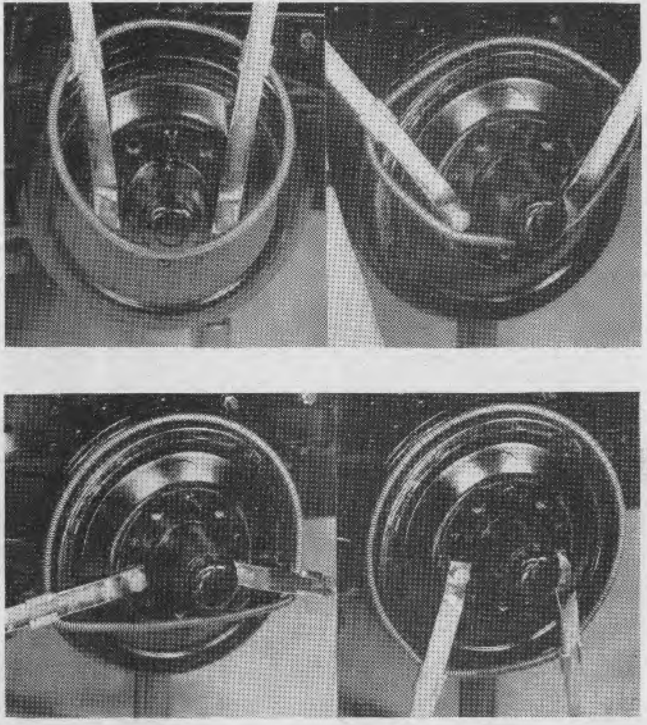
Hydraulic fluid coats the cylinder with deposits.

Clean and polish a bore so that inspection can be made for pitting or roughness on brake cylinder walls. If cylinder is not perfectly smooth it should be honed with S. T. 5136. After this is done it should be checked with plug gauge S. T. 5137 to see that it is not oversize.

The "no go" plug gauges as illustrated range from 15⁄16 to 1¼ size and can be used in all wheels and master cylinders. For example: The size of the cylinder is 1″ and the "no go" gauge has a diameter 1.005″, it is not advisable to have the cylinder larger than the 1.005 size.

The above hone has two sets of stones with range from ¾″ to 1″ and others have a range from 1″ to 1¼″.

Brake Drum Damper Spring Installing Tool



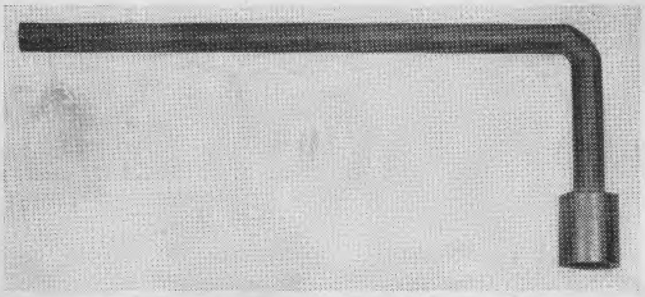
Tool No. S. T. 5093—Hydraulic Brakes

Brake squeaks can be cured by installing brake drum damper springs around the outside of the brake drum.

Place a car jack against the brake pedal. Fasten the tool to the brake drum, using the wheel screws. Do not fasten too tightly, as the tool and the sliding sleeve must slide around the brake drum. Place the damper spring over the tool handle, with the spring resting on the sliding sleeve. The picture shows how the tool is pulled downward and the spring is rolled onto the brake drum.

A mechanic with this tool can install the brake drum springs in a few minutes. The time saved will prove the tool a good investment. No shop should be without one.

Brake Master Cylinder Filler Plug Wrench

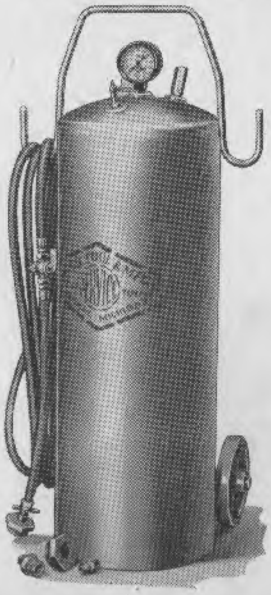


Tool No. S. T. 983 Models 1500-1507-1600-1601-1603-1608-1700-1708

Here is a special square socket wrench for removing the brake master cylinder filler plug, without removing the front floor boards. This saves about 15 minutes time.

Remove the round plug in the front floor boards and insert the special wrench through the opening. Remove the cylinder filler plug, and fill the master brake cylinder with fluid. The wrench can also be used on 120B, 120C and Six models.

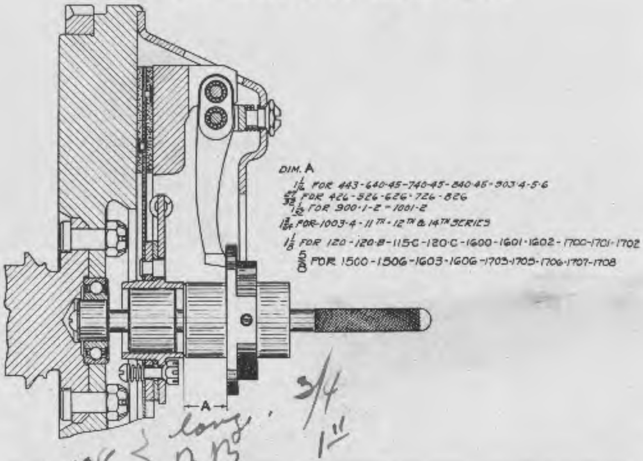
Brake Pressure Tank Assembly



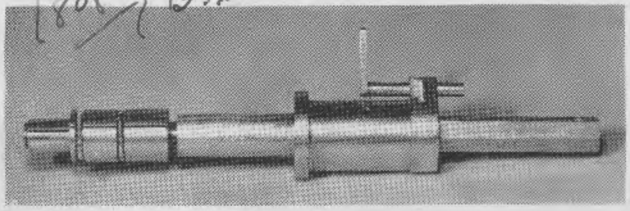
Tool No. S. T. 5035—(with wheels)
Tool No. S. T. 5110—(without wheels)

Air in the brake system is indicated by a "springy" pedal and it does not seem to reach a point where "solid" resistance is felt. To remedy this condition, the hydraulic brake system must be bled and refilled with liquid. Use this bleeding tank. It requires only one man to operate it. Connect the tank to the master cylinder. By having pressure in the tank, the entire braking system is quickly and thoroughly bled and recharged. The pressure forces the fluid through the system, removing the air bubbles and taking with it all foreign matters, leaving the lines and cylinder charged with fresh fluid. This tank is fitted with a pressure gauge, standard air valve, and sufficient hose to reach from the master cylinder to the supply tank. It is mounted on a carriage, making it easy to be moved from car to car.

Clutch Plate Aligning Fixture


DIM. A
1/16 FOR 443-640-45-740-45-840-45-903-4-5-6
27/32 FOR 426-526-626-726-826
1/32 FOR 900-1-2-1001-2
13/64 FOR-1003-4-11TH-12TH & 14TH SERIES
1/8 FOR 120-120-B-115-C-120-C-1600-1601-1602-1700-1701-1702
5/8 FOR 1500-1506-1603-1606-1703-1705-1706-1707-1708
—A—

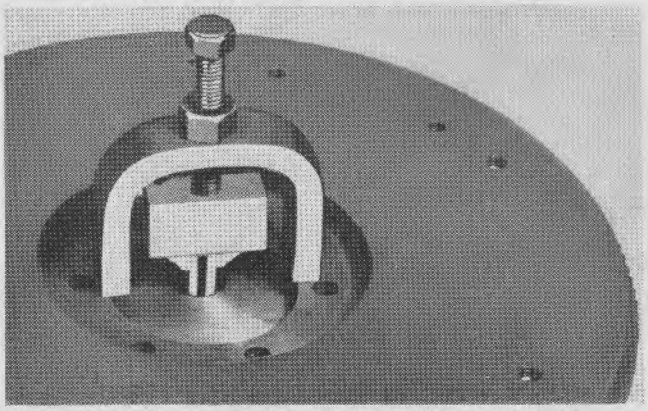
long. 3/4
1"
1808 } BB



Tool No. S. T. 5004

Place the tool into the flywheel bearing. Adjust the expansion arbor into the flywheel bearing and driven member by turning the hexagon nut at the back of the tool to the right until it is tight in both parts. The driven member now is in perfect alignment for the transmission assembly. Install the clutch finger sleeve on the tube being sure that the end of the gauge is flush against the driven member hub. Then adjust the fingers to the dimensions given above.

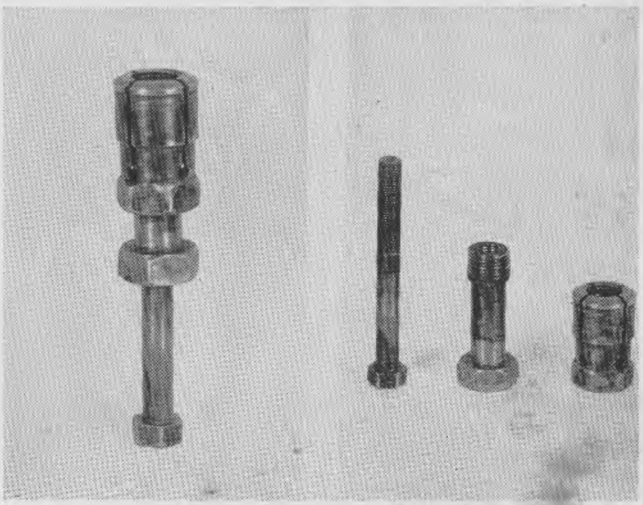
Clutch Shaft Flywheel Bearing Puller



Tool No. S. T. 5012—Models 120-120B-120C-115C-1600-1601-1700-1701

The clutch shaft pilot bearing is often difficult to remove and this tool is extremely valuable for this operation. Insert the fingers through the bearing, expand the fingers by turning down on the center screw, then turn the nut on the center screw against the puller yoke, this then will remove the bearing.

Clutch Shaft Flywheel Bearing Puller

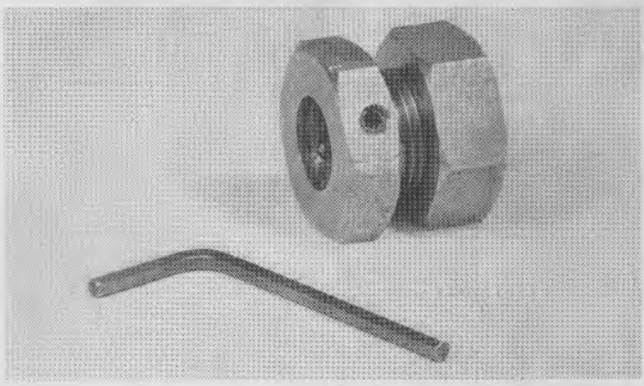


Tool No. S. T. 764—Models Senior Eight and Twelve

With the use of this puller, the removal of the flywheel to change the bearing is eliminated.

To use, place puller in bearing, then expand to size and screw in bolt against the end of crankshaft. This will remove the bearing very easily.

Clutch Housing Shifter Relay Pivot Puller

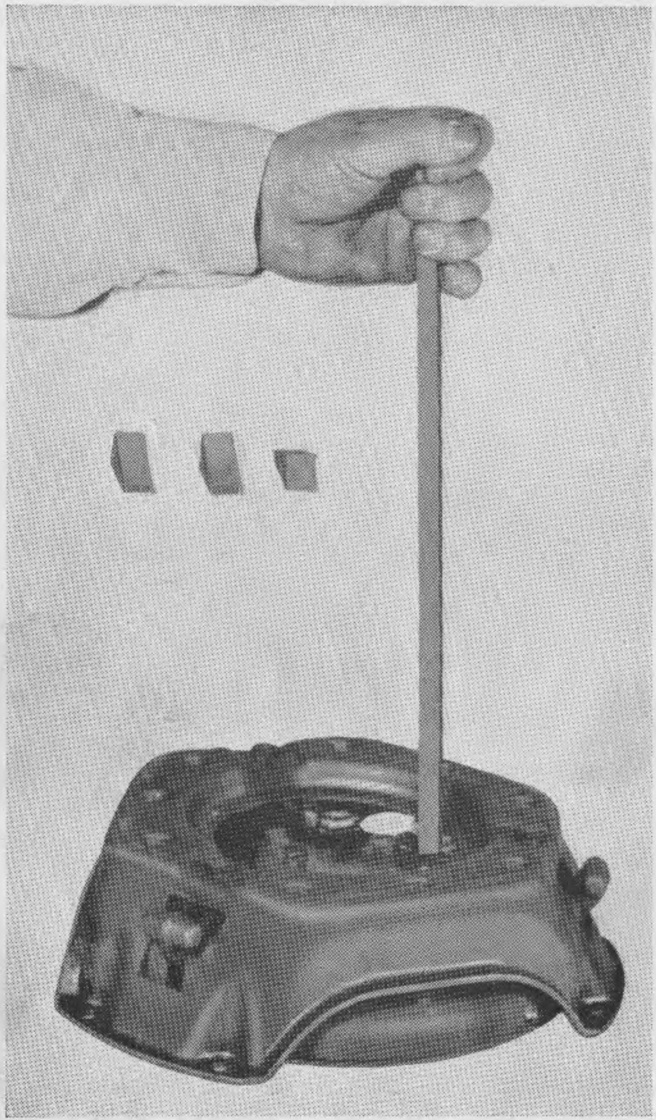


Tool No. S. T. 5124—Model 1600-1

Service Letter No. 8, Vol. 12, illustrates a recent production change in the clutch shifter relay lever and a special tool has been designed to remove old pivot pins from the flywheel housing.

The operation is simple. Remove the clutch linkage and turn the pivot pin with a small Stillson wrench. In some cases you may find the pin is in the housing very tight. It may be necessary to countersink the end pivot pin with a 3/16" drill on both sides so that the Allen set screws will not slip off. Place the puller over the pin and tighten both Allen set screws with a 1/8" Allen wrench. Then turn the large hex nut against the flywheel housing until the pin is removed.

Clutch Release Lever Bar



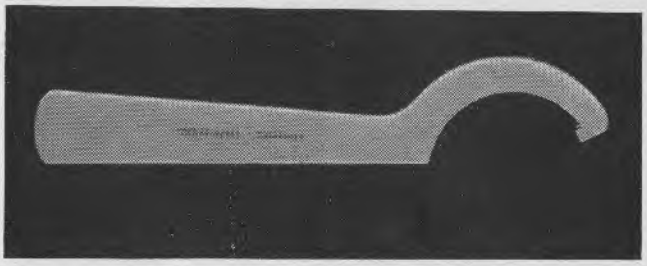
Tool No. S. T. 5028—Models 120-120B-120C-115C 1500-1507-1600-1601-1700-1701

This set of tools will be found essential when installing clutch plate. Before placing the cover assembly to the flywheel, press the levers down with the clutch lever bar far enough so that the wedges can be placed under the lever ready for assembling. Before assembling, insert the clutch aligning fixture No. S. T. 5004 into the flywheel bearing, through the hub driven member and cover assembly, then tighten. After the clutch has been tightened to the flywheel, the wedges and aligning fixture can be withdrawn.

When removing clutch cover assembly from flywheel for overhaul, it is necessary to place three wedges under the clutch fingers before it can be removed from the housing, or it will not pass by the clutch throwout bearing lever.

NOTE: Use a dummy flywheel on the bench for setting the levers. Wedges are listed in tool catalogue under Tool No. S. T. 879.

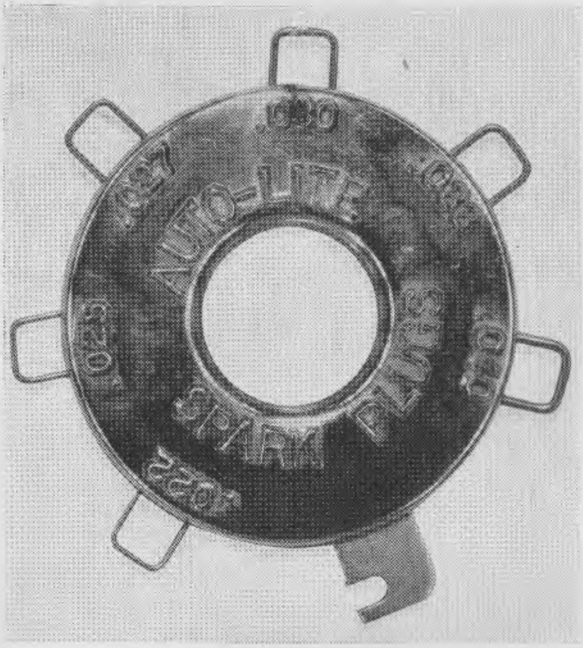
Clutch Shaft Nut Spanner Wrench



Tool No. S. T. 836—Models Senior and Eight Twelve

This wrench is necessary to loosen the clutch shaft bearing nut when adjusting the synchromesh transmission.

Spark Plug Gap, Magnifying Glass and Adjusting Tool



Tool No. S. T. 5083

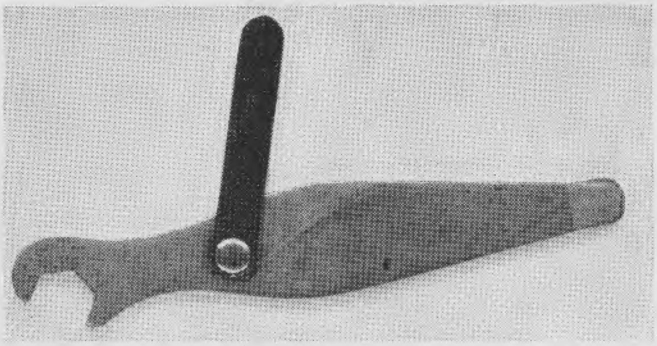
Here is a new spark plug gap tool that must be used with the new style spark plug.

Spark plugs with worn electrodes having a concaved or arced surface cannot be measured accurately with a flat feeler gauge. With a round feeler the exact width of a concaved gap is easily, accurately, and instantly determined.

A gap adjusting tool is also supplied. Feeler sizes are as follows: .022″—.025″—.027″—.030″—.033″—.040″.

The magnifying glass enables the dealer to show his customers the condition of their spark plugs.

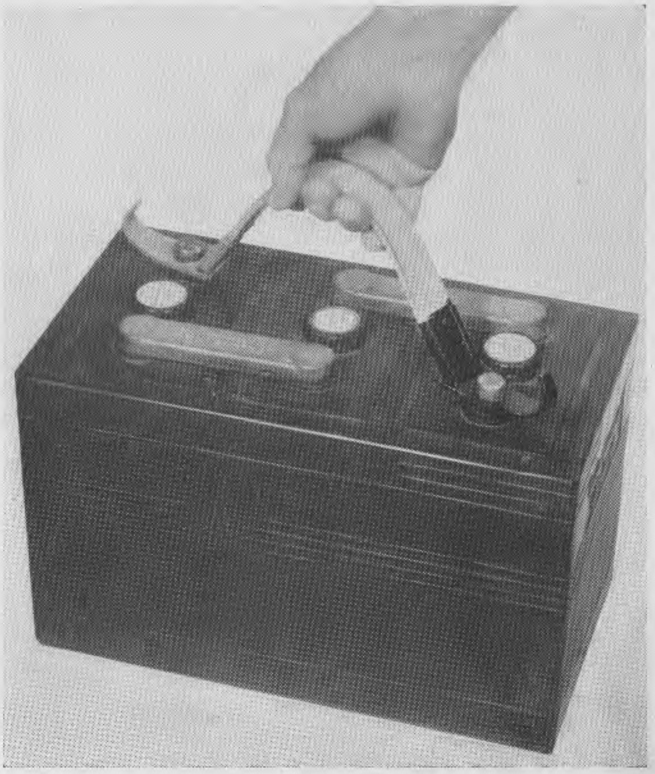
Distributor Wrench



Tool No. S. T. 868—Model Twelve-120-B-C-115C-1500-1600-1-3-1700-1703

This is used to adjust the make and break point in the distributor. It is designed especially for Auto-Lite Distributor.

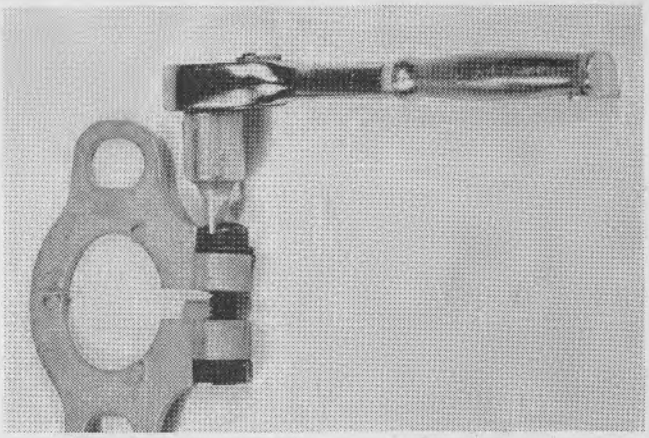
Battery Carrier



Tool No. S. T. 841

This carrier is made with special jaws and has special rubberized webbing. The jaws are dropped over the post. When lifting the battery they take hold and cannot be released until the battery is set down.

Distributor Bracket Ratchet Wrench—Screw Driver Socket

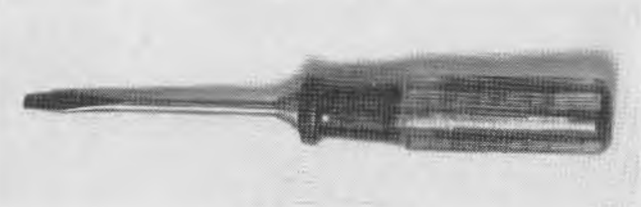


Tool No. S. T. 5125
Model 120-B-C-115C-1600-1601-1700-1701

This tool is used for setting the ignition timing.

Mechanics who have tried to loosen the screw on the distributor bracket know this is a rather difficult operation. This midget ratchet wrench will loosen or tighten the bracket very easily.

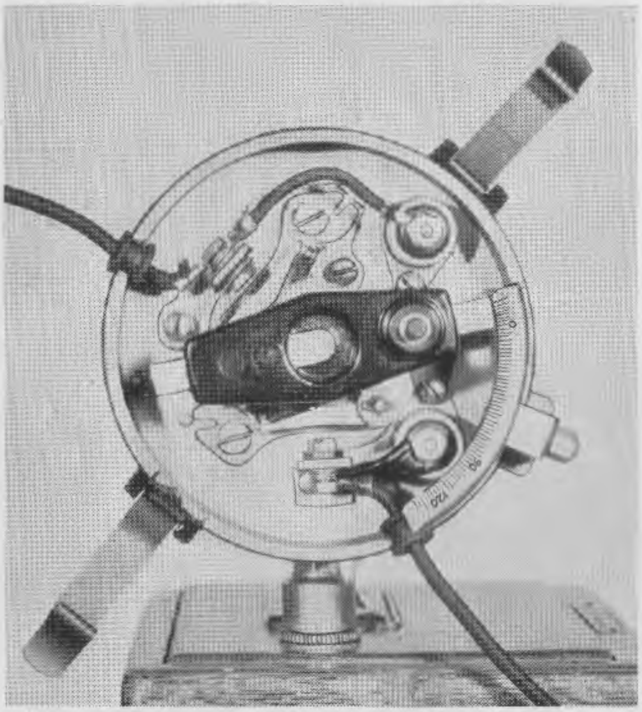
Neon Screw Driver



Tool No. S. T. 916

The Neon type screw driver has a transparent composition handle for testing spark plugs and electrical wiring, etc. The handle is guaranteed to stand as much abuse as a wooden handle and it is particularly useful for service salesmen for locating electrical trouble.

Distributor Synchronizer



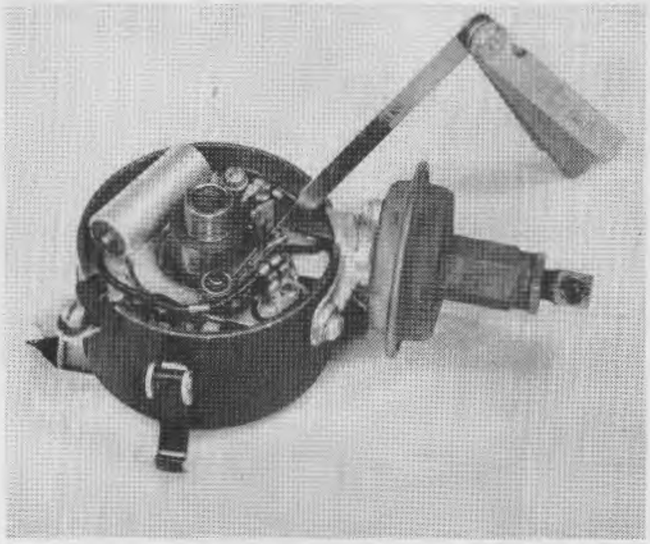
Tool No. S. T. 907—Models 1001-3—1100-5 —1200-5—1400-5

With this type of distributor a spark occurs every 45 degree rotation of the distributor shaft. Two separate ignition coils are used which are operated through two separate sets of contact points so arranged that first one set opens and fires one coil. This set then closes and the other set opens firing the other coil. As a result better engine performance is obtained especially at high speed than with the average single coil distributor.

To synchronize distributor type No. 5033450 synchronizing tool S. T. 907 can be used.

One set of contact points is stationary and the other set is mounted on a movable plate. The stationary contact set is adjusted first and the synchronizing is completed by adjustments to the movable set of points.

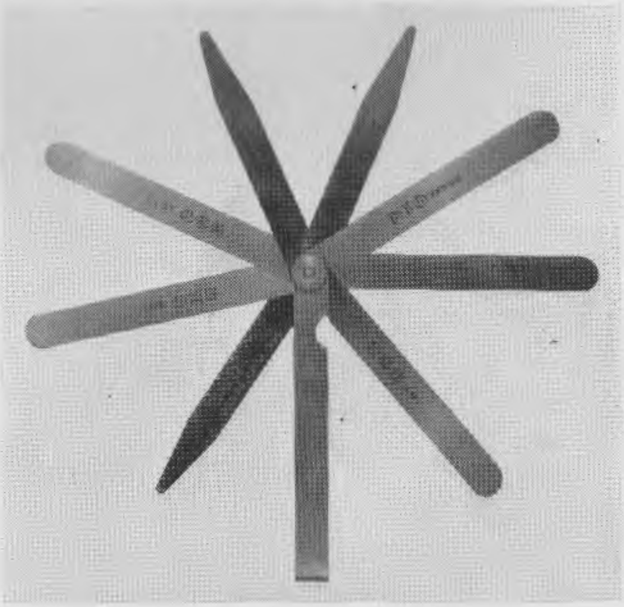
Distributor Breaker Point Thickness Gauge



Tool No. S. T. 657—All Models

A handy distributor and spark plug thickness gauge in a heavy case. Has nine leaves .020″ .015″ .014″ .010″ .009″ .008″ .007″ .006″ .004″.

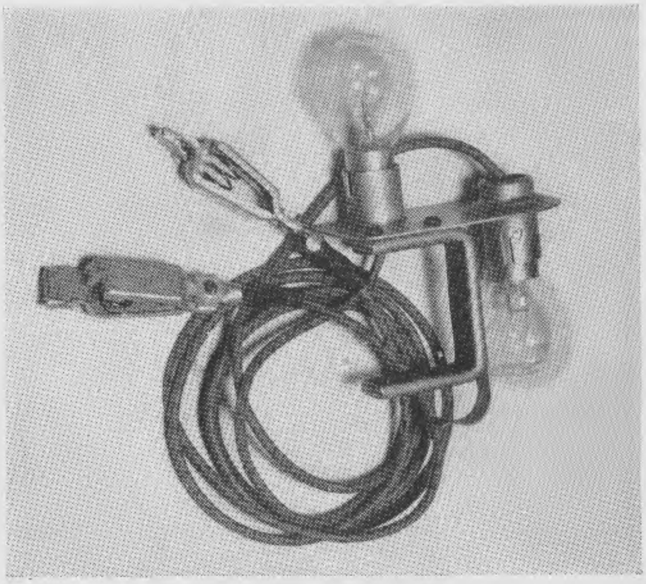
Thickness Gauges



Tool No. S. T. 657

A feeler thickness gauge is a necessity. A knurled nut on the holder stud allows the blades to be replaced. All thickness guages are tested and each one clearly marked with its size.

Ignition Timing Light

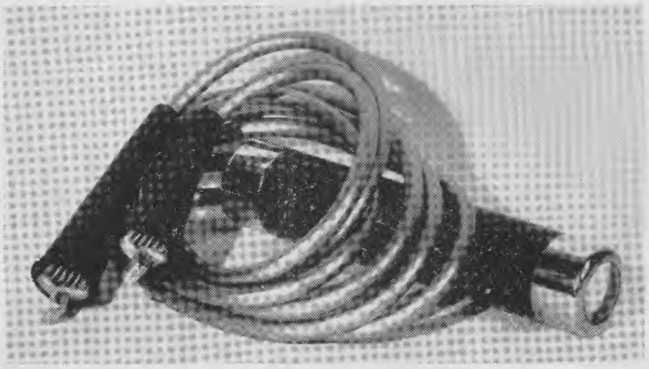


Tool No. S. T. 724—All Models

It is important to time ignition accurately. S. T. 724 consists of two wires, one to be connected to the live terminal on the horn and the other to the primary lead on the distributor.

Clip timing device to crankcase at the edge of the starter hole and with spark advanced, turn motor by hand until flywheel mark (Spark No.1) is directly in line with the pointer. The bulb connected with the terminal on the distributor should light indicating that the points have broken.

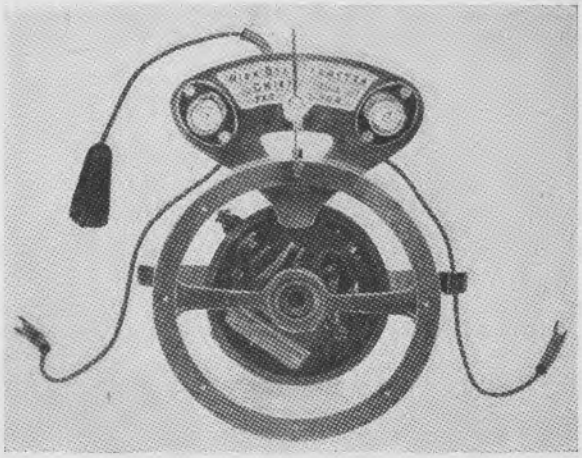
Ignition Timing Master



Tool No. S. T. 935—All Models

The positive way to time an engine accurately is while it is running. This can be accomplished only by knowing the exact position of the marking on the vibration damper. One wire from the lamp is connected to the spark plug ignition wire. The other to the ground and the light shows a flash which illuminates the vibration damper marking every time the current is delivered to the plug wire.

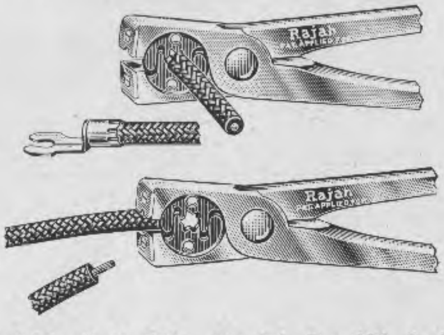
Distributor Synchrometer



Tool No. S. T. 913—All Models

Correct synchronization of the contact breaker points is essential for a smooth running motor. The synchrometer will synchronize any Packard distributor with double breaker points. Perfect synchronization can only be made by checking all cam lobes for wear. If cam conditions were always perfect, dependable synchronizing would only require a pair of test lights. A satisfactory check up on cam lobe conditions is simply and easily made with the proper tool. The tool must be a 360 degree graduated circle in conjunction with some visible means for checking interruption of one set of points independent of the other as well as consecutive interruption.

Ignition Cable Crimping Tool



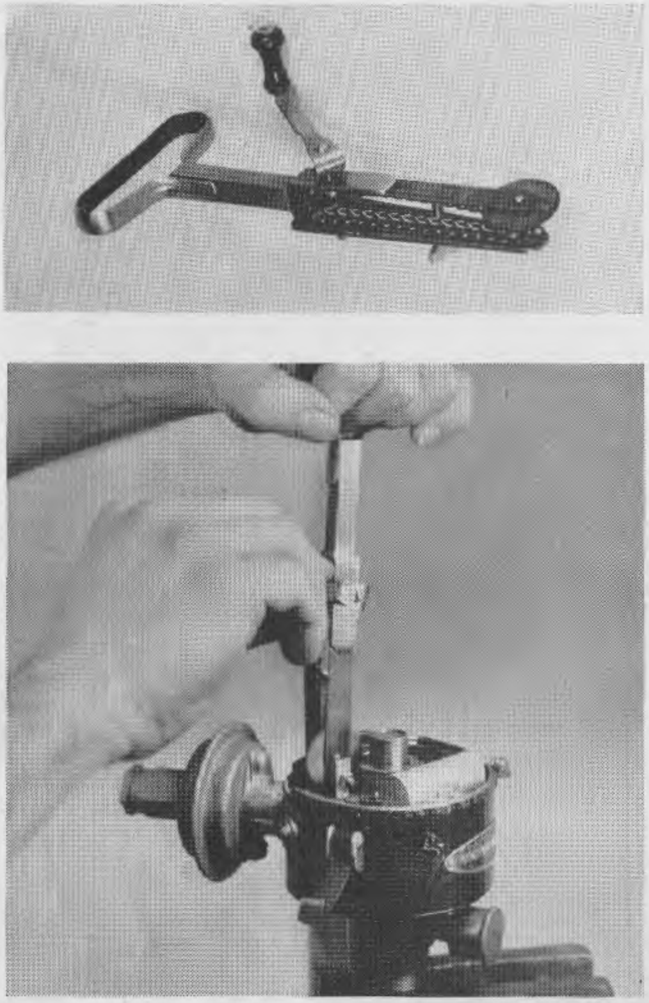
Tool No. S. T. 946—Models Twelfth Series

This tool is designed for use with Twelfth Series ignition wirings and terminals. Its use does not require any solder and it, therefore, enables you to do a quicker and better job.

The tool has a cutting edge for removing just the right amount of insulation from the cable. The exposed wire strands are then bent back and the ignition cable is inserted into the terminal. Place the terminal in the tool with ferrule flush with the crimping jaws, compress the handle tightly and you crimp the terminal to the cable. You now have a positive and permanent connection.

ELECTRICAL

Ignition Point Grinder



Tool No. S. T. 2002
Detail No. S. T. 1467—Ignition Point Grinder Disc Sets (Set of six, size $\frac{7}{8}$")

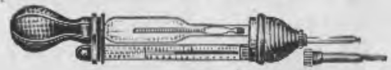
This ignition point grinder provides a distinctly new method for grinding ignition points quickly and accurately without removing the points.

The picture shows the hole in the side arm of tool that engages the stationary distributor point, thereby, assuring the proper location of the double faced grinding disc.

The disc floats on the shaft allowing it to be held parallel between the points by the spring pressure of the breaker arm. This insures an accurate job. Each turn of the handle represents a three-inch stroke, which means a speedy job.

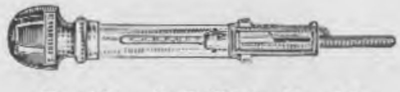
The discs are low priced and easily replaced.

Battery Tester



Tool No. S. T. 963—Break-Not No. 40

Batrometer



Tool No. S. T. 791—No. 30

With the Batrometer or Break-Not, no matter what the temperature of the electrolyte is you can get the actual and true specific gravity by reading the hydrometer, noting the thermometer and adding or subtracting the points shown on the thermometer scale, from the hydrometer reading.

Condenser Tester

Tool No. S. T. 945

(Used only with 110 AC current.) A condenser tester is a necessity these days. The condenser should always be tested when work is done on the ignition system, or on a motor tune-up job. This tester will show leaks, shorts, and open circuits.

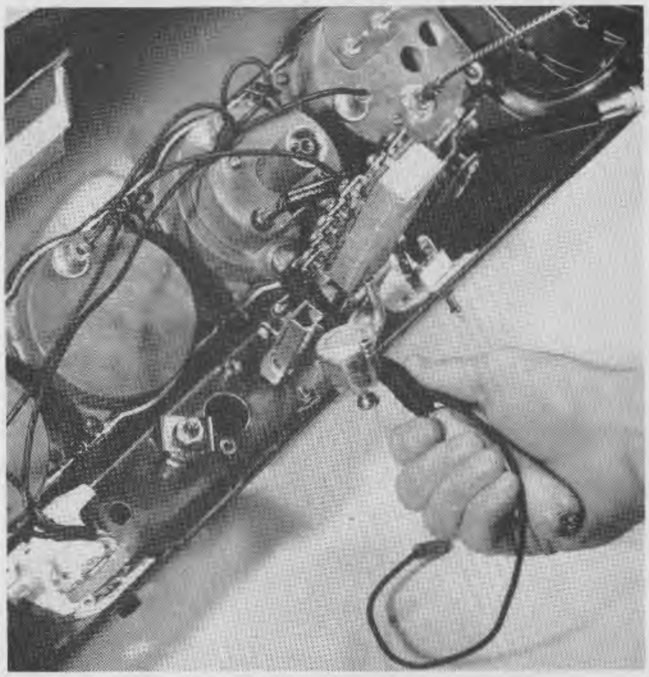
Headlamp Nut Wrench

Tool No. S. T. 2019
Model 1600-1601-1603-1608-1700-1701-1703-8

This wrench is used for removing headlamp nut. The large end is 1-$\frac{1}{16}$ opening with slot cut through the center for the headlight cable to slip through.

It is very difficult to remove this nut without this special wrench.

Instrument Board Indicator Light Inserter



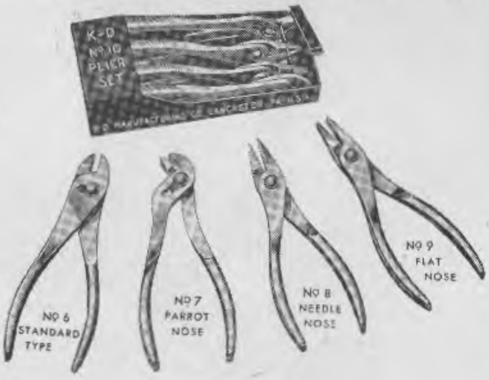
Tool No. S. T. 5114 Model 1603-5-6-8-1708

This special tool will be appreciated by mechanics who have wasted much time trying to replace indicator light behind the instrument board.

The tool is insulated with small rubber hose to prevent short circuit at headlight and starter switch terminal.

Place the wire through the slot in tool and, allowing light socket to slide into the open end of tool, press the tool with indicator light into socket as shown in above illustration.

For Ignition, Electrical and Radio Work



Plier Set

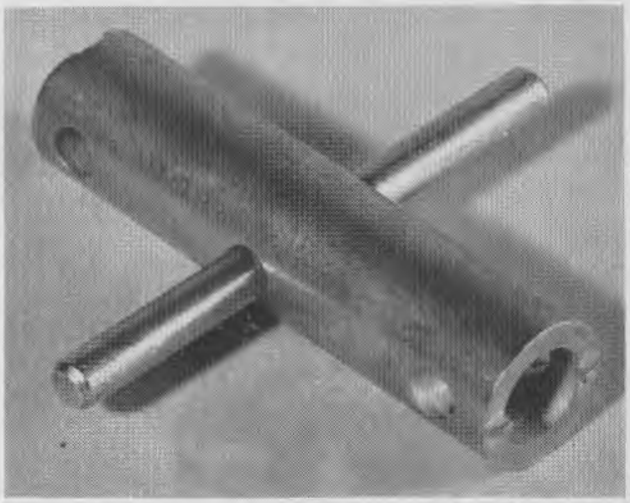
Tool No. S. T. 966

Here are four distinct types of Pliers—each 4¼″ long—forged from Special Alloy Steel, carefully tempered for correct hardness.

The complete set packed in a handy pressed steel box, meets the requirements of a wide range of diversified jobs that call for small well-made tools of durable construction.

These pliers are just the right size for small work and those hard-to-get-at places. Each type is a gracefully designed tool of quality material and excellent workmanship.

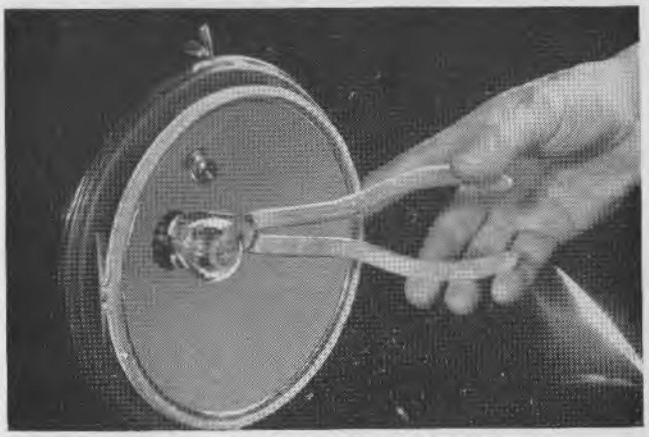
Instrument Board Reading Light and Starter Motor Switch Wrench



Tool No. S. T. 5111—Models 1600-1601-1603-1605-1700-1701-1703-8

A combination wrench, designed to remove instrument board reading light switch nut on 1600-1601-1700-1701 models and removing instrument board starter switch nut on 1603-1605-1703-8 models.

Lamp Bulb Pliers



Tool No. S. T. 996—All Models

Anyone who has ever tried to remove lamp bulbs will recognize the value of this tool. Why risk cut fingers or scratched reflectors, when bulb pliers make the removal quick and easy.

These pliers grip the base of the bulb and allow it to be firmly held for installation without any danger of the bulb glass being broken.

ELECTRICAL

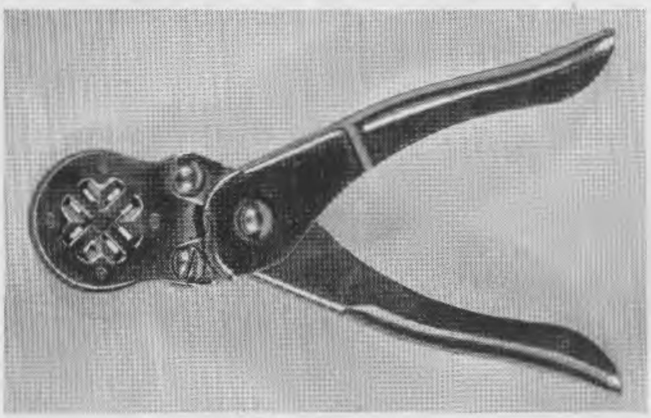
Battery Filler

Tool No. S. T. 932

This is entirely different than any other Battery Filler ever manufactured. It is made of molded vulcanite, and its capacity is one gallon. You can bounce it on the floor, kick it around, but it won't break. It's light in weight and of a beautiful glossy red color. It is practical for the most severe service.

The gauge glass shows the height of distilled water in the jug. The top opening holds any hydrometer and permits easy filling.

Lamp Cable Connector Tip Crimping Tool



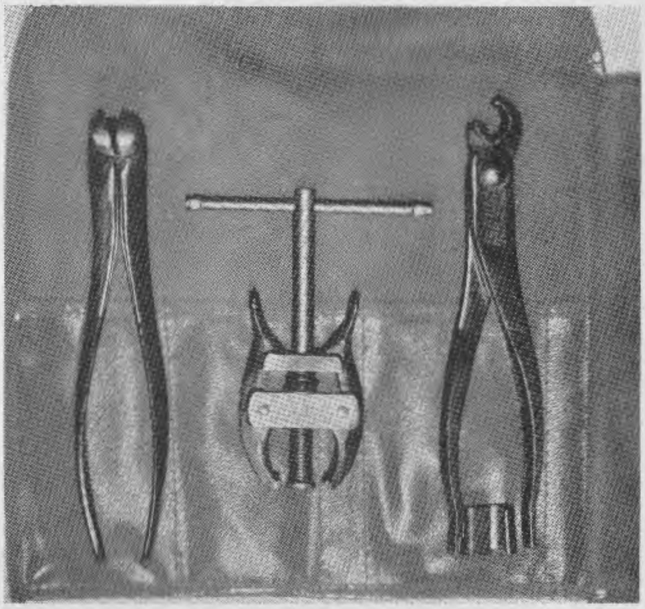
Tool No. S. T. 957

This tool was designed for the 10th, 11th, 12th, and 14th Series, and the One Twenty Model, for crimping head and tail light cable connector tips, male and female, piece numbers 201736 and 201737.

Remove just enough insulation from cable. The exposed wire strands are then placed into male or female connector tip. Place the connector tip in center of the crimping tool, flush with the crimping jaws. Compress the handle and crimp the connector tip to the cable. This will give you a positive and permanent connection.

With this method of crimping the wires, it is not necessary to solder, and this will eliminate the time for heating the soldering iron, and does away with any corrosion which happens in soldering.

Battery Service Kit



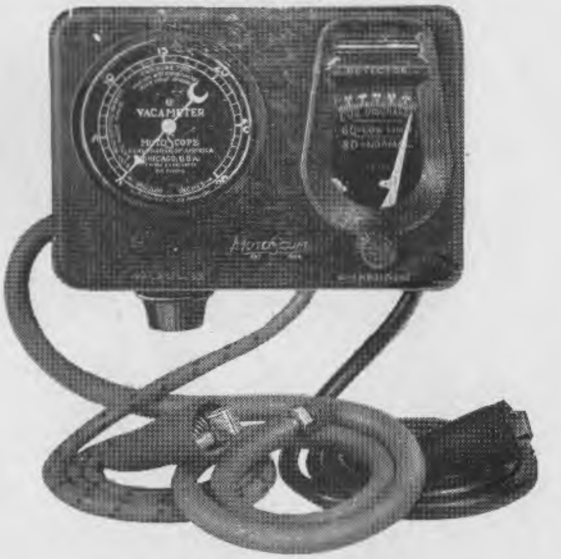
Tool No. S. T. 997

Efficient combination of superior tools, that insures ease, speed, and better battery connections.

Assembled in a three compartment black leatherette kit.

Contains Nut Plier and Post Cleaner, Clamp Lifter, Clamp Spreader and Cleaner.

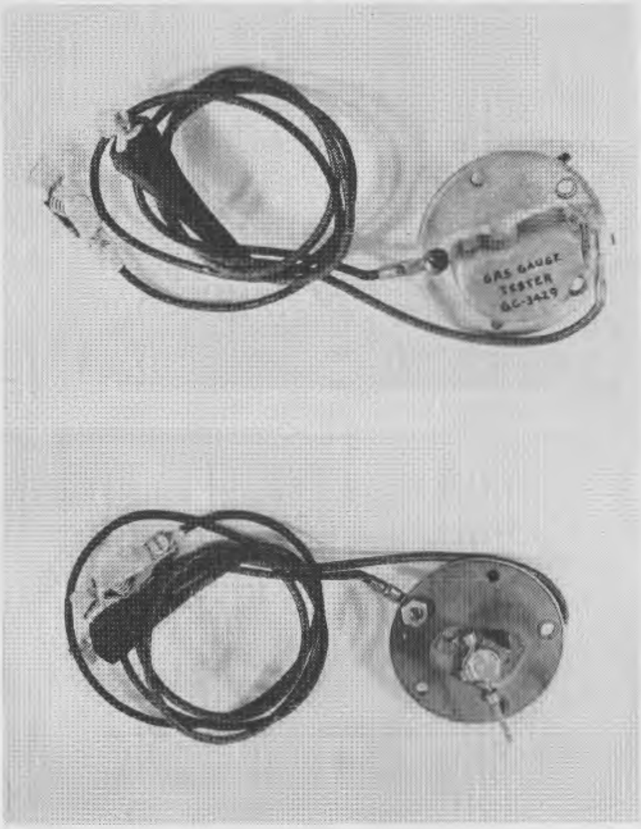
Motoscope



Tool No. S. T. 796

The motoscope is a scientific instrument that records engine troubles, reveals the true conditions of your engine and shows the mechanic exactly where the trouble lies without taking down any part of the engine. Instructions issued with each tool.

Gasoline Tank and Instrument Board Gauge Tester



Tool No. S. T. 2008

The Gas Gauge Tester is composed of two assemblies, known as—

Dash Unit (mounted in instrument panel).

Tank Unit (mounted in gas tank).

With ignition switch Off, disconnect tank wire from back of Dash Unit (This is on the larger or right hand terminal, viewed from driving position).

Attach tester wire A Red to this terminal and tester wire B Black to any grounded part of car.

Turn ignition switch On—move tester arm up and down, Dash Unit should register Full and Empty. If so, turn ignition switch Off and reconnect tank wire.

If Dash Unit does not register at all on above test—before replacing it make certain that it is getting current from the ignition switch. This can be quickly tested by connecting a 6 volt lamp from ignition terminal (left hand terminal on back of Dash Unit) to ground.

If Dash Unit is OK, next check the wiring between Dash and Tank Units as follows:

Disconnect Tank Unit wire near the gas tank at the bayonet connection or terminal junction block.

Attach Tester wire A Red to the connection running to the dash and wire B Black to ground of car.

Turn ignition switch On—move Tester arm up and down observing Dash Unit indication which should move from Empty to Full if the wiring is OK.

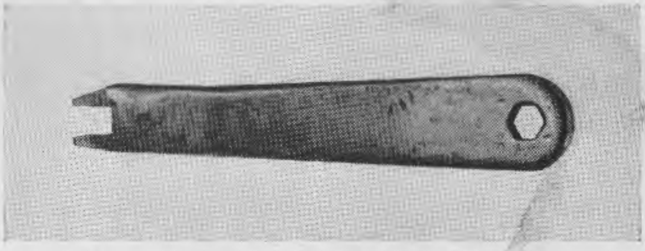
If on this test Dash Unit reads Empty at all times or the reading is noticeably lower than during the check at the Dash Unit, look for shorts or leaks in the wiring between dash and tank. Leaks are most liable to occur at terminal junctions. If Dash Unit reads above Full at all times or if it reads higher at Empty and Full than readings obtained when checking at the dash, look for poor connection or break in the wiring. Be sure contacts in bayonet connectors are clean and if terminal blocks are used, be sure wires are clean and secured in place.

If Dash Unit and wiring check OK, drop tank and remove Tank Unit. Clean away all dirt that has collected around Tank Unit terminal as road dirt, particularly calcium chloride, causes an electrical leak that will cause an error in reading.

After cleaning thoroughly, connect Tank Unit to the wire leading to dash, grounding the Tank Unit with a short piece of wire from the outer edge to any part of the car. Turn ignition switch On and move the float arm up and down. If this unit is OK the Dash Unit will give corresponding Empty and Full readings.

If Tank Unit is OK, reinstall in the tank—if not replace with a new Tank Unit but first repeat above test before installing in the tank. NOTE: Always check Tank Units for freedom of movement of the float arm by raising it to various positions and observing that it will fall to Empty position in every instance.

Instrument Board Headlight Switch Wrench



Tool No. S. T. 5089—Models 120C-115C-1600-1-2-5-8 1700-1-3

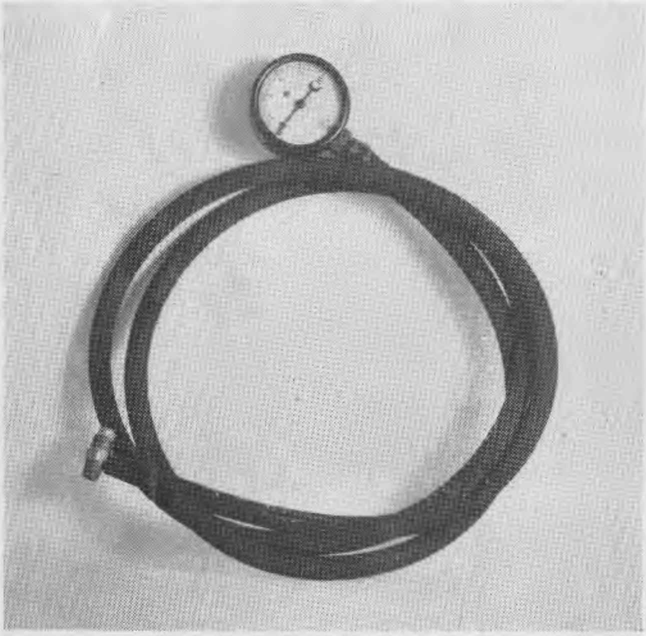
This tool is made to conform to the shape of the headlight switch nut. Not one repair man in a hundred can do this job satisfactorily without it.

Gasoline Mileage Tester

Tool No. S. T. 828

The gasoline mileage tester is simple to attach and is accurate and will give you your gasoline mileage under any conditions. It is used with the vacuum system as well as the pump and is guaranteed against breakage and should last indefinitely. This is particularly useful to show the car owner the mileage he is getting as it is in plain view and can be seen from the seat and tests can be made on the pick-up or over a given course.

Gasoline Pump Pressure Gauge Assembly



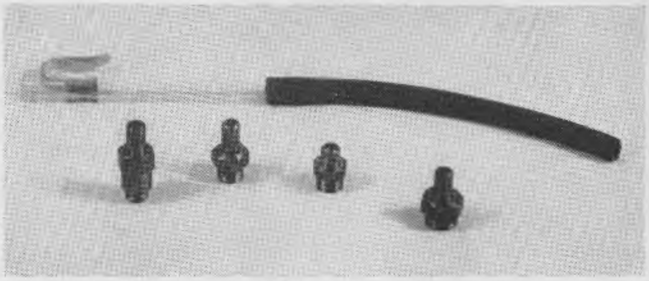
Tool No. S. T. 917—All Models

This is for the purpose of testing the pressure produced by the vacuum pump. It connects between the carburetor and the pump and has a hose long enough so that the instrument may be attached to the windshield. It is held by a vacuum cup on the back of the gauge.

Additional adapters for the Detroit Lubricator carburetors are available.

S. T. 923 726-740-826-840—½ x 20 Thread
S. T. 924 901-904 ⅝ x 18 Thread
S. T. 10006—120-B—adapter
S. T. 10016—120-C-115-C-1600—adapter
1700-1701

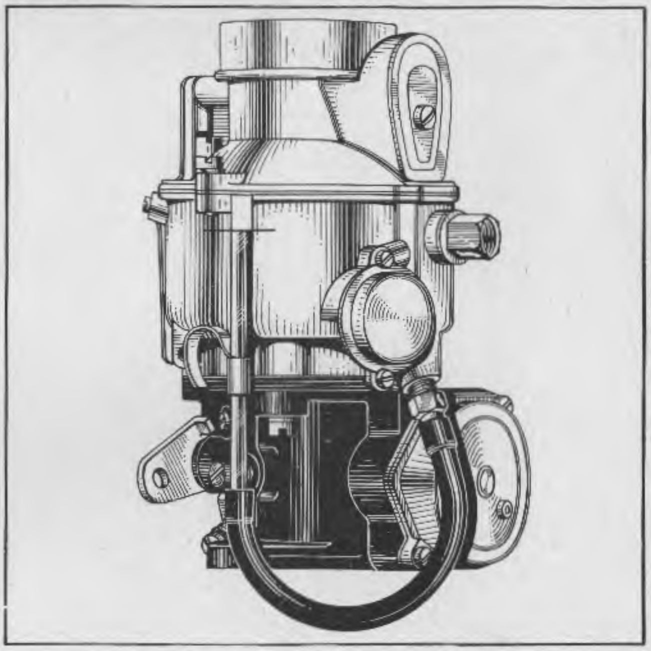
Carburetor Float Level Gauge



Tool No. S. T. 978

The gasoline level can be checked on the car without dismantling the carburetor. This float level gauge permits the checking of the gasoline level while the motor is running.

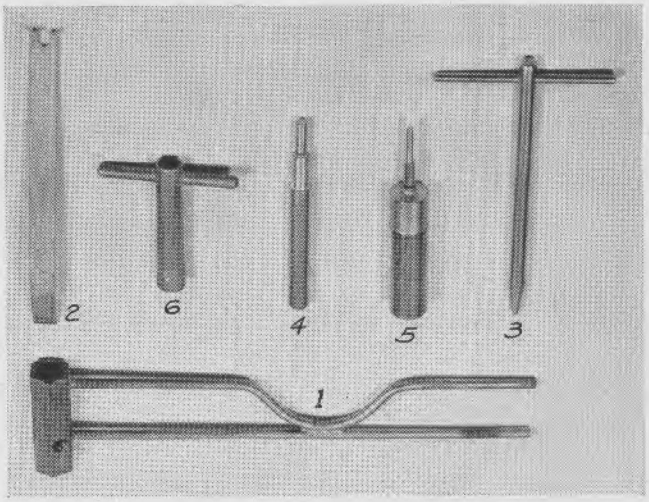
This gauge is attached to the carburetor by removing the jet plug as illustrated. With the car perfectly level the fuel level in the carburetor is duplicated in the glass tube of the float level gauge.



To check the float level, proceed as follows:

1. Remove the jet plug, select the proper adapter, and fasten with gasket.
2. Mark the outside of the carburetor housing, from the top of the float housing below the gasket—15/32″ on the 120B-C-1601-1701, ½″ on the 115C-1600-1700, and ⅝″ on the 1200 to 1703 Series car. See illustration. Hold the gasoline level to a plus or minus 1/32″.
3. Hold the glass tube even with the top of the float housing.
4. Start motor, let motor idle. The gasoline level should now check with above dimensions. If not, reset float, bend lip of the float level. A slight bending is sufficient to change float level. The gauge must be in a vertical position to get the correct level reading.

Stromberg Carburetor Tools



Tool No. S. T. 2027 (Additional Set)
Tool No. S. T. 2028 (Complete Set)

The illustration shows six different new tools required to service all Stromberg Carburetors.

In order to bring your present carburetor tools up to date, order S. T. 2027.

The complete set S. T. 2028 consists of S. T. 869 and S. T. 5007 as shown in tool catalog on page 19, and with S. T. 2027, makes a complete set of carburetor tools.

The above illustration shows six different types of new tools required to service all Stromberg Carburetors.

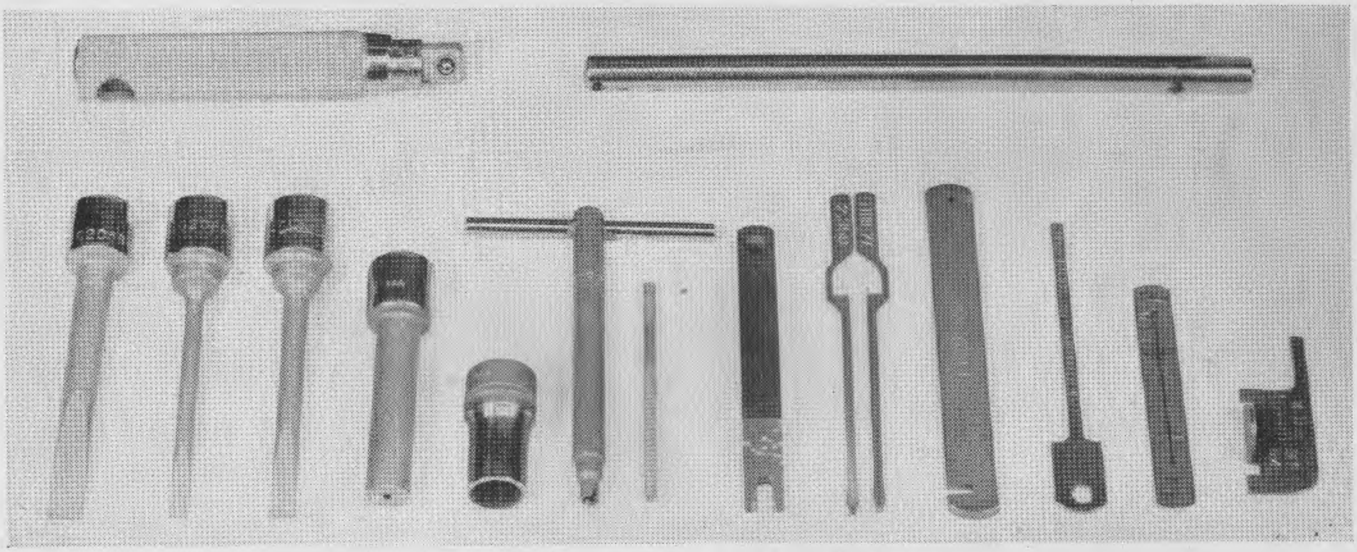
In order to bring your recent carburetor tools up to date, order S. T. 2027, as shown above.

The complete set S. T. 2028 consists of S. T. 869 and S. T. 5007 as shown in too. catalog on Page 19, with above S. T. 2027 makes complete set of carburetor tools.

Additional Tools

1—T-24970 By pass tester
2—T-24733 Vacuum piston wrench and float adapter
3—T-24967 Main jet puller
4—T-25056 Choke gauge
5—T-25057 Choke gauge
6—T-25047 Choke wrench

Carter Carburetor Tools

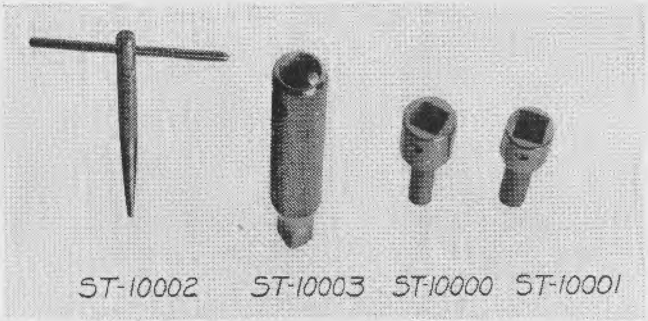


Tool No. S. T. 5095—Models 120C-1601

T Handle Nozzle Puller	15196B
Grip Handle for Sockets	15204
Handle Bar (for Grip Handle)	15205
Screwdriver Bit 5/16" Blade	15206B
Screwdriver Bit 1/4" Blade	15207B
Screwdriver Bit 3/16" Blade	15208B
Screwdriver Socket 7/16"	15210B
Nozzle Puller	15225
Percolator Socket 13/32"	15451
Fast Idle Gauge .018"	15596
Rivet Extractor for Small Rivets	15604
Pump Stroke Gauge 31/64"	15605
Percolator Arm Bending Tool	T109-22
Metering Rod Gauge Marked 2.359	T109-27
1/8" Float Level Gauge	T109-36

These are standard tools designed to service Carter Carburetors. Every tool is designed to do a certain job exactly as it should be done. The tools are made of vanadium steel to assure the highest quality.

Carburetor Socket Wrenches

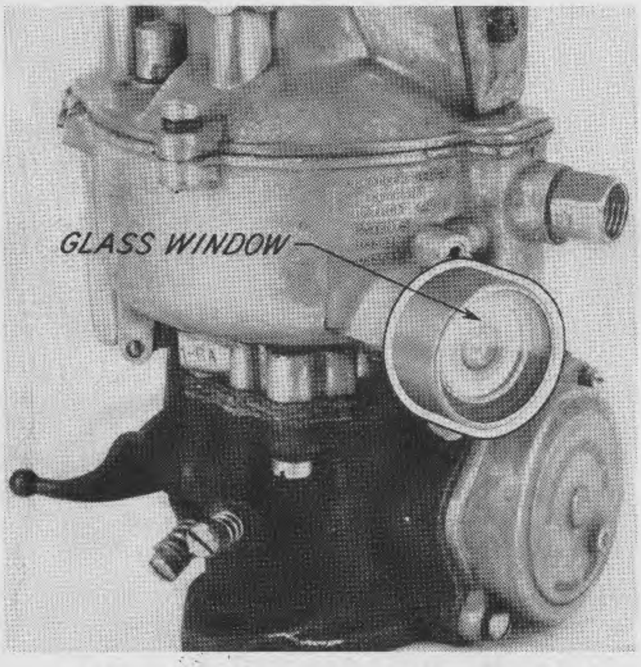


Tool No. S. T. 5007—Models 120-120B-120C-1601-1701

These wrenches are thin straight walled double broached hexagons, designed for Stromberg carburetors, and used for removing metering jet, main jet discharge puller and check valve. There is also a special handle. These are standard tools used by Stromberg Company, and are all of the special tools required to service the carburetor.

Note—Use socket No. S. T. 10,000 for Chandler Grove Carburetor.

Economizer Valve Inspection Cover



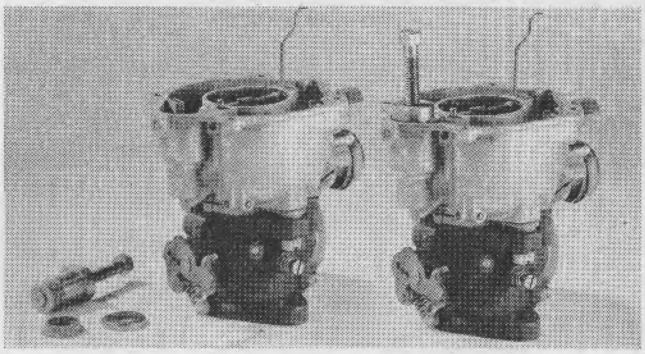
Tool No. S. T. 5120—Model 115C-1600-1700

Before making any adjustment on Chandler Grove Carburetors, it is most important that the economizer valve be checked. A leaky valve seat gasket or diaphragm will change carburetor mixture and economy.

The economizer diaphragm and gasket are checked for leakage while the motor is running, by looking through the glass window of the special cover which is illustrated in the above picture. If there is a leak you will be able to see gasoline in the economizer suction valve chamber.

The vacuum of the carburetor will hold this special tool in place as long as the motor is running. Care should be taken that it is removed before the motor is stopped or it may break. We do not guarantee this tool against breakage of glass.

Carburetor Pump Seal Retainer Puller



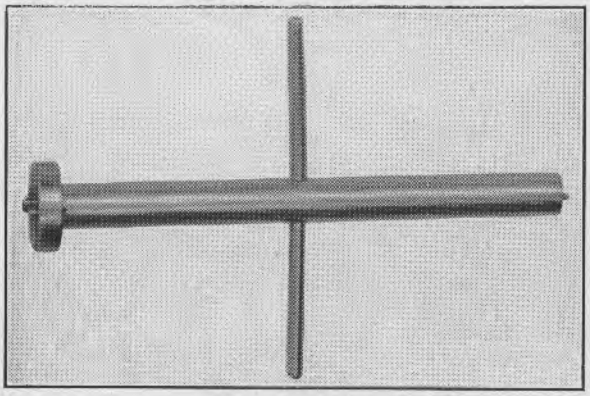
Tool No. S. T. 5129—Model 1600-1700

A special puller has been designed to remove pump seal retainers on 1600-1700 Chandler-Grove Carburetors in order to install new type pump leather expander.

Remove upper half of carburetor and accelerating pump. Then screw threaded end of the puller into the pump seal retainer, and turn 5/16" screw to the bottom of carburetor until the retainer is removed.

By removing the 5/16" screw from the puller, the puller can be used for replacing the retainer. Every carburetor mechanic needs one and will appreciate having this tool as it is a time saver.

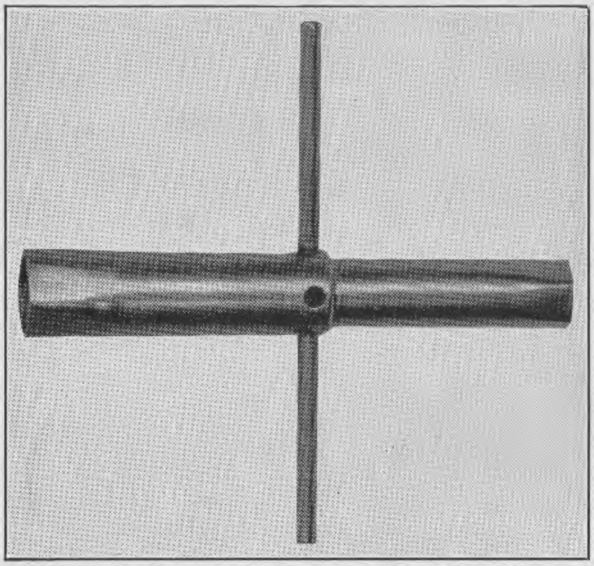
Carburetor Air Valve Wrench



Tool No. S. T. 751—Models 726-740-826-840-901-902-903-904-1001-2

A tool for removing the piston air valve.

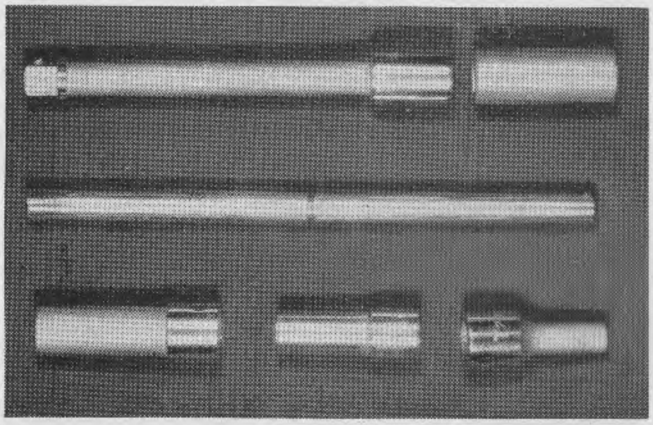
Carburetor Body Stud Socket Wrench



Tool No. S. T. 750—Models 726-740-826-840-901-903

A wrench used to remove the gasoline strainer body stud on the 7th, 8th and 9th Series Carburetors.

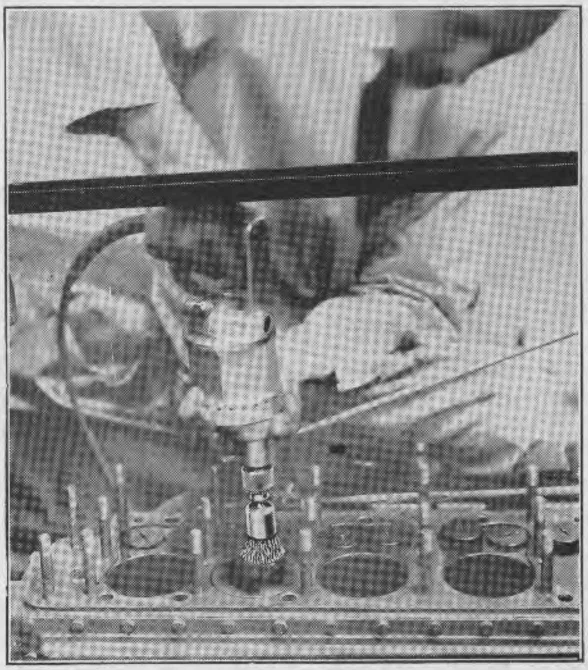
Carburetor Socket Wrenches



Tool No. S. T. 869—Models 1001-2-1100-4-1200-5-905-6-1005-6-1107-8-1207-8-1400-1408-1500-1508-1603-1608-1703-8

These wrenches are thin straight walled double broached hexagons—designed for the Stromberg carburetor and for removing main metering jets, pump valve, needle valve seat and screen located at bottom of float chamber. This is the standard tool used by the Stromberg Co.

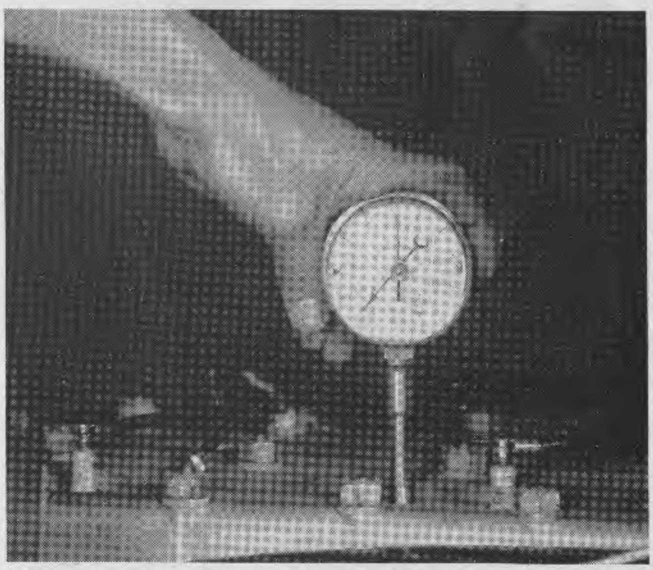
Carbon Brush



Tool No. S. T. 205—All Models (Iron Head)
Tool No. S. T. 953 (For Aluminum Head)

This brush is made specially for removing carbon from flat surfaces. It is a real time saver.

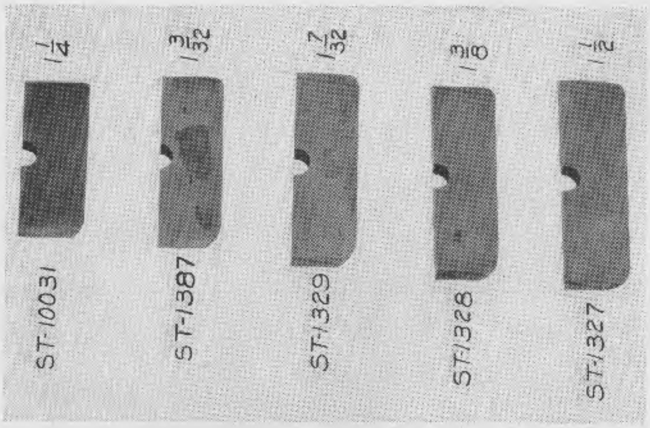
Cylinder Compressometer

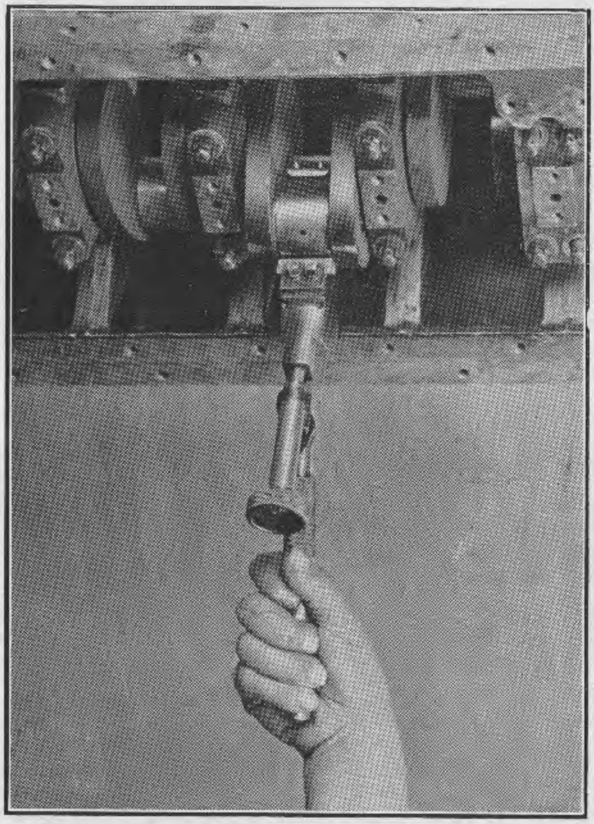


Tool No. S. T. 193—All Models

A compression gauge complete with connection and rubber tip. It is necessary to use a 200-pound gauge for accuracy. If a 100-pound gauge is used the actuating spring would soon take a set because of its being continually compressed too near its maximum limit.

Crank Pin Returning Tool





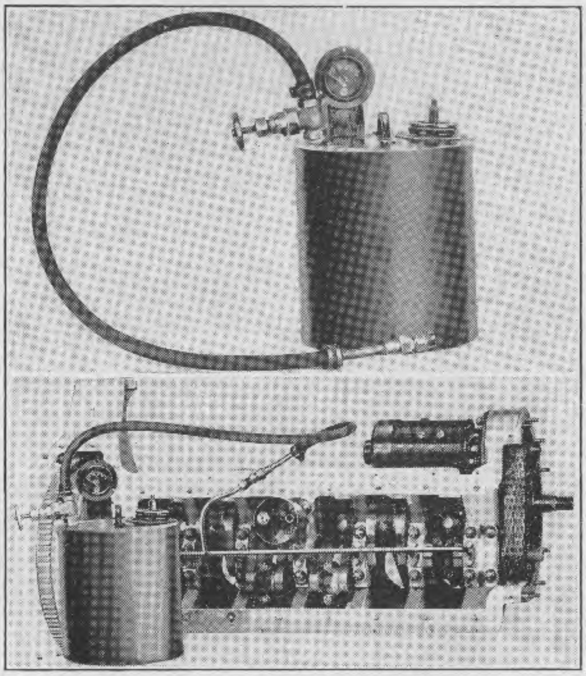
Tool No. S. T. 707—All Models
Tool No. S. T. 895—Twelve

Crank Pin Cutting Oil

Tool No. S. T. 706—Quart

Connecting rod crank pins that are badly worn out of round or scored, can be resized without removing crankshaft from motor. When this tool is used, first apply Packard special crank pin cutting oil and place the tool on crank pin. Turn up the knurled adjusting knob until the cutting blade barely touches the crank pin and have a helper slowly turn the crankshaft with the starting crank so the operator can locate the proper position to hold the tool so that it will clear the inside of the motor.

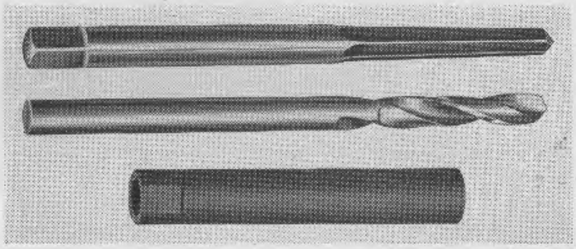
Lubricating System—Test Tank

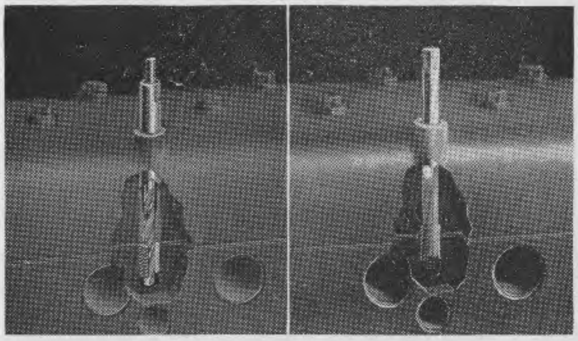


Tool No. S. T. 109—All Models

Every Packard Service Station should have this equipment to do motor bearing work correctly. Complete information on the use of this equipment is carried in Technical Letter No. 1746.

Cylinder Head Stud Extractors

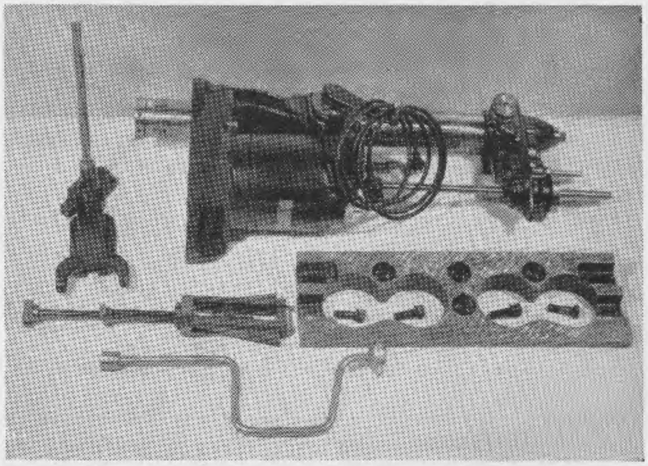


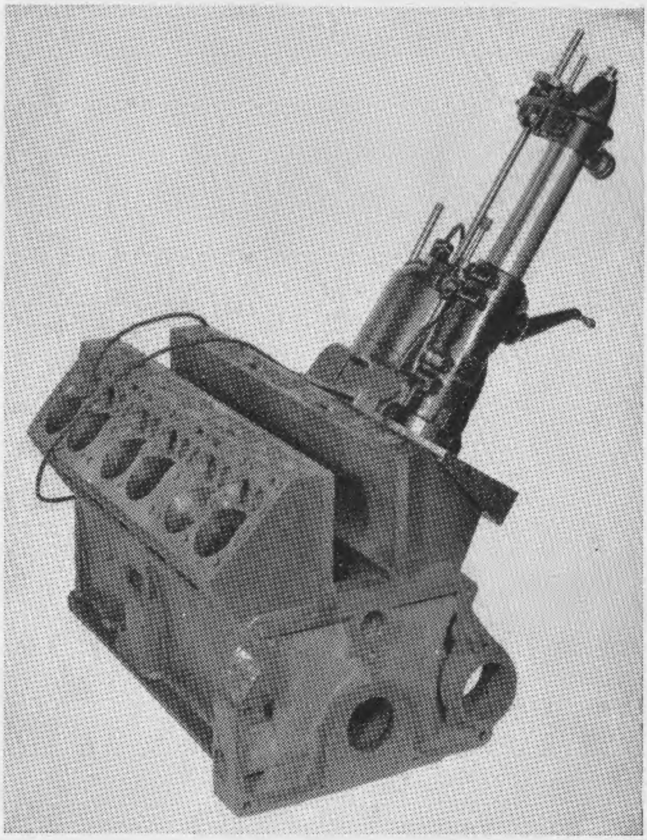


Tool No. S. T. 830—All Models

Do not remove cylinder head. Use drill guide for drilling broken end. Tap in extractor so flutes grip firmly and screw out.

Cylinder Boring Bar and Adapter Plate



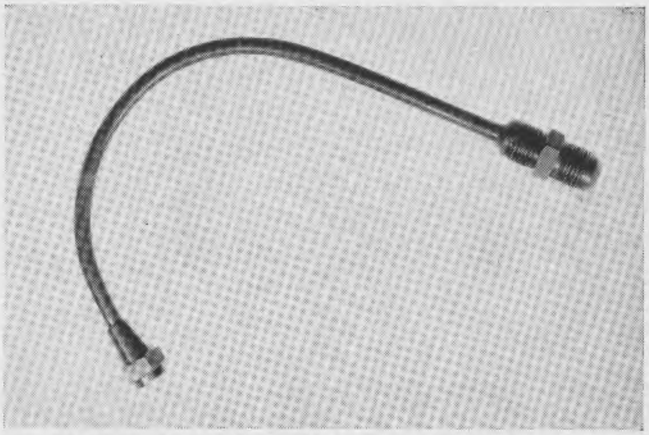


Tool No. S. T. 905 Boring Bar—All Models
Tool No. S. T. 1426 Adapter Plate—Twelve

Boring Bar Adapter Plates should be used on all cylinders. These will square the bore with the crankshaft and make it unnecessary to remove the motor from the frame for reconditioning the cylinder block.

We have also designed a container that will fit in the bottom of the bore which will stop the metal from going into the crankcase.

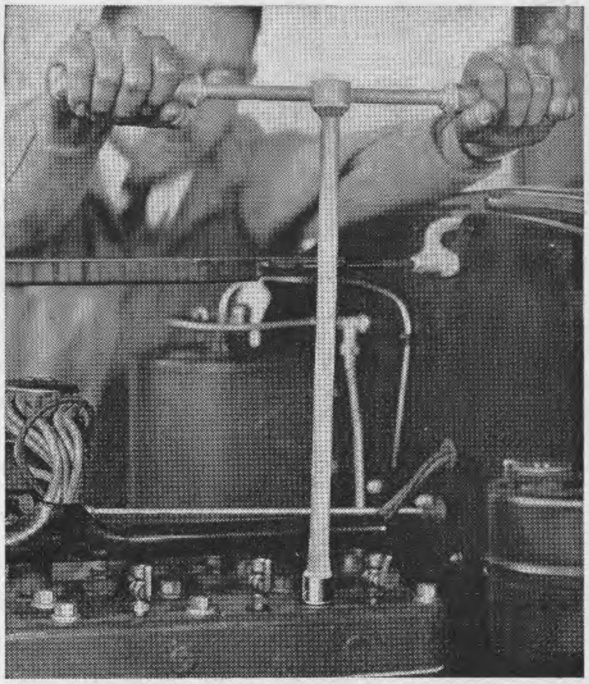
Oil Test Connection



Tool No. S. T. 1429—Models 905-6-1001-3-6-1100-3-8-1200-3-8-1400-8-120-120B-120C-115C-1600-1700-1701

A special connection has been designed and is now carried under S. T. 1429. This will assist in making a main bearing oil test. By fastening the new connection to the instrument oil gauge tube at the rear end of the crankcase, the other end of the tube is fastened to the oil pressure test tank.

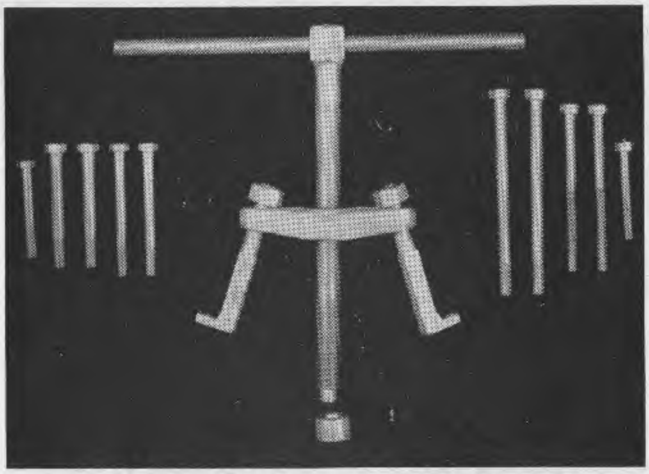
Cylinder Head Nut Wrench T Handle



Tool No. S. T. 224—(¾″ Opening)
Tool No. S. T. 225—(⅝″ Opening)

A long T handle wrench long enough to supply the necessary leverage. It is a CV wrench which is a guarantee of strength. There is sufficient weight in the handles so that after the nut is loosened it may be spun off.

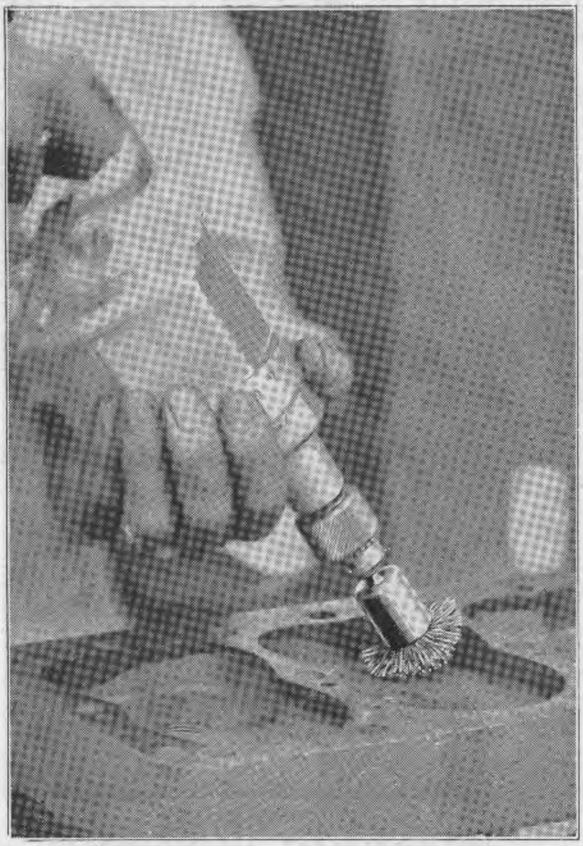
Crankshaft Pulley and Sprocket Puller



Tool No. S. T. 113—All Models

This equipment will pull the camshaft fan pulley, the crankshaft sprocket, the camshaft sprocket and vibration damper.

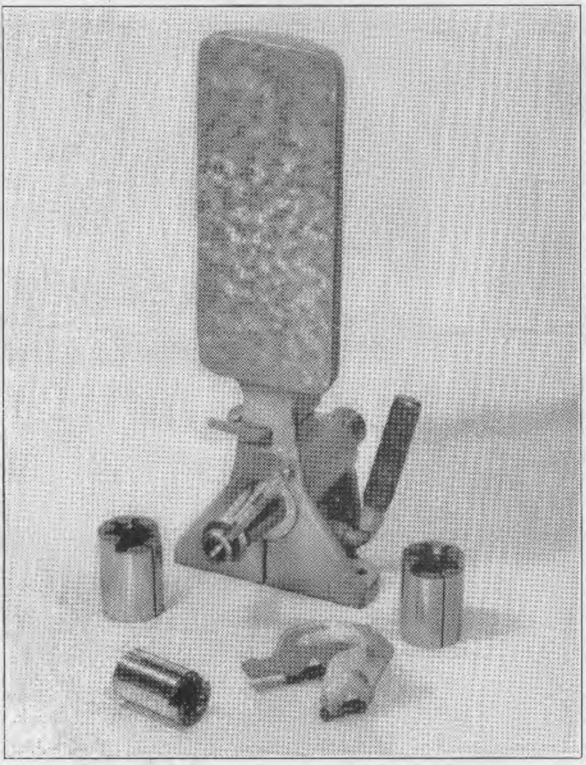
Carbon Brush—Flared Type



Tool No. S. T. 204—All Models (Iron Head)
Tool No. S. T. 954 (For Aluminum Head)

A special brush designed to clean carbon from the corners. It should not be used on flat work but in conjunction with Tool No. 205. A straight type brush is designed for that purpose.

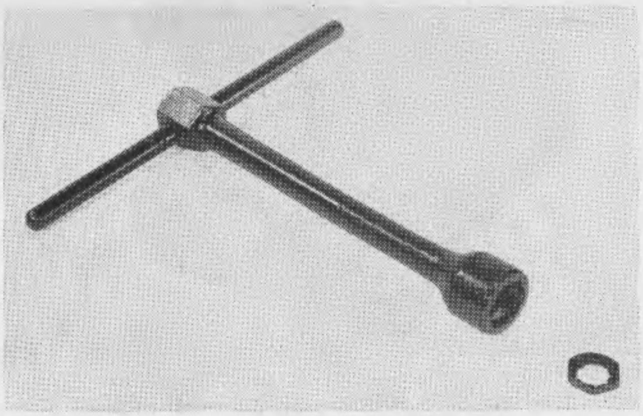
Connecting Rod Aligning Jig



Tool No. S. T. 758—All Models
Tool No. S. T. 5024—Arbor 2$\frac{3}{32}$ Size—Models 120-120B-120C-1601-115C-1600-1700-1701

Price includes five separate arbors to take care of all cars.

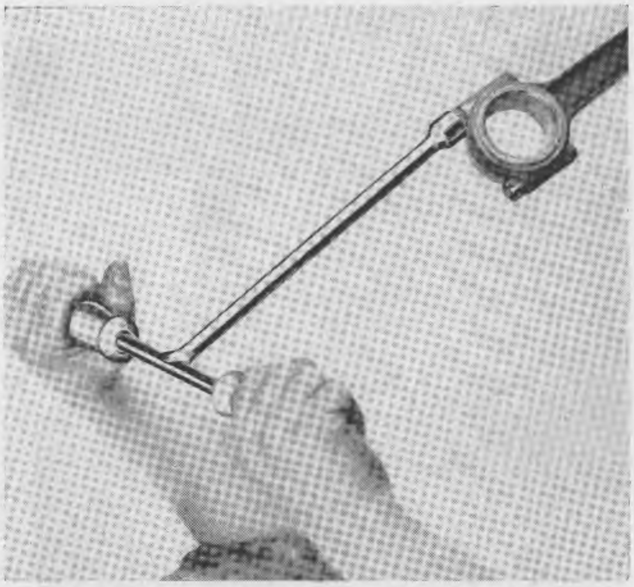
Connecting Rod Pal Nut Wrench



Tool No. S. T. 5127—Models 1700-1

The "T" handle connecting rod socket wrench is made to exactly conform to the shape of the lock nut. When the lock nut is assembled to the connecting rod (this is important—always use new lock nuts) tighten with your fingers as tight as possible, then use connecting rod lock nut wrench and tighten lock nut from ¼″ to ⅓″ turn only.

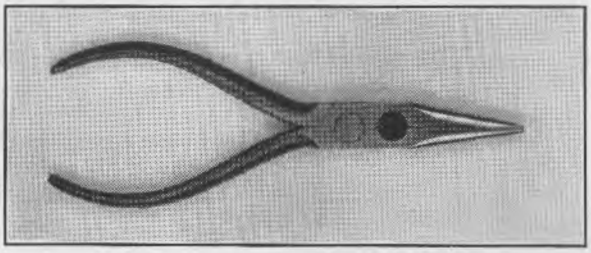
Connecting Rod Nut Wrench



Tool No. S. T. 191—All Models ($\frac{9}{16}$" Opening)
Tool No. S. T. 192—All Models ($\frac{5}{8}$" Opening)
Tool No. S. T. 950—Twelve ($\frac{11}{16}$" Opening)

The wrench is made of chrome-vanadium and will stand up under heavy stress. The edge of the socket is ground off for clearance so as to provide the maximum hold on the nut.

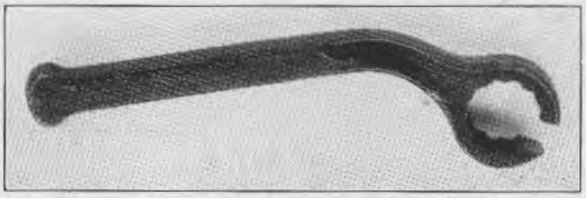
Long Nose Pliers



Tool No. S. T. 785

This is just the pliers to use for connecting and disconnecting the clutch throw-out bearing spring when removing and replacing the transmission on the 120 car. This long nose pliers may be used for removing and replacing valve spring keys also.

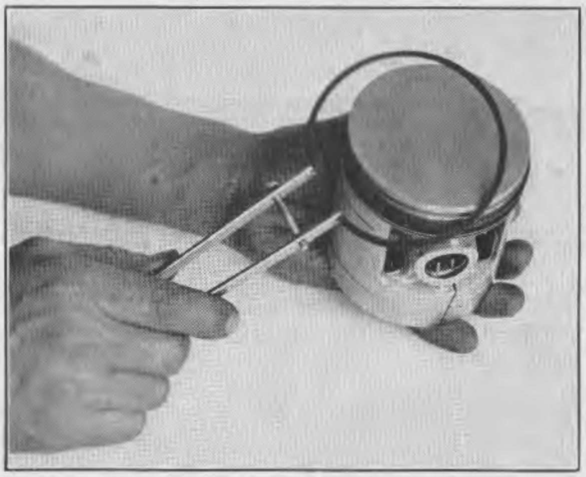
Gasoline Line Frame Junction Wrench



Tool No. S. T. 783—Models 826-840

This wrench is used for removing the gasoline line on the 826-840 models at the rear right side of frame.

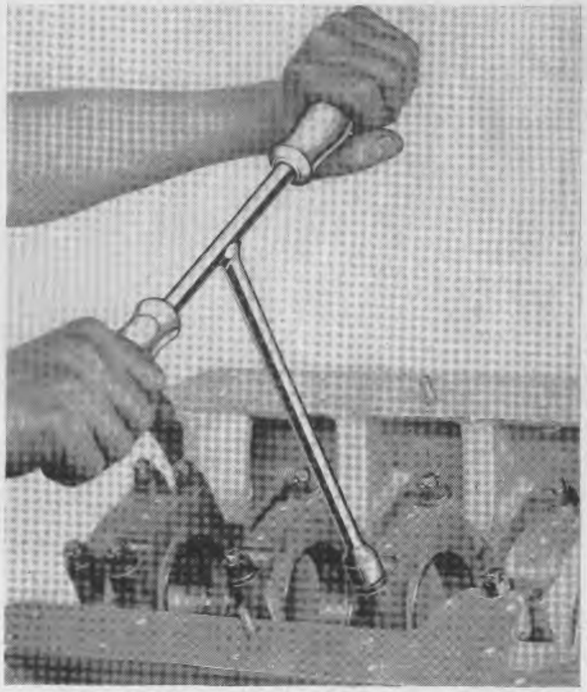
Piston Ring Expander



Tool No. S. T. 197—All Models

For removing and replacing piston rings. The expander holds the rings at slot opening. This type of expander does not injure the edges and can be used on any Packard piston ring. Increased expansion can be obtained by adjusting the set screw.

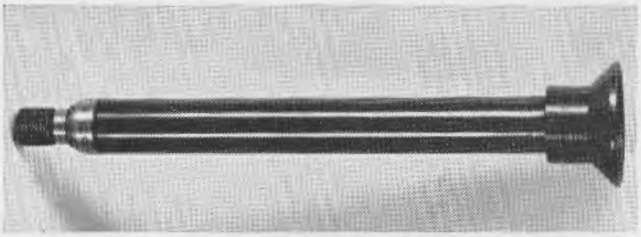
Crankcase Main Bearing Nut Wrench



Tool No. S. T. 192—($\frac{5}{8}$" Opening)
Tool No. S. T. 721—($\frac{3}{4}$" Opening)
Tool No. S. T. 950—Twelve ($\frac{11}{16}$" Opening)

The outside of the socket is ground off to permit use on the rear main bearing cap. The handle is just the right length for working under the motor with the car jacked up on Packard motor jacks.

Valve Depth Gauge—Twelve



Tool No. S. T. 912—Twelve

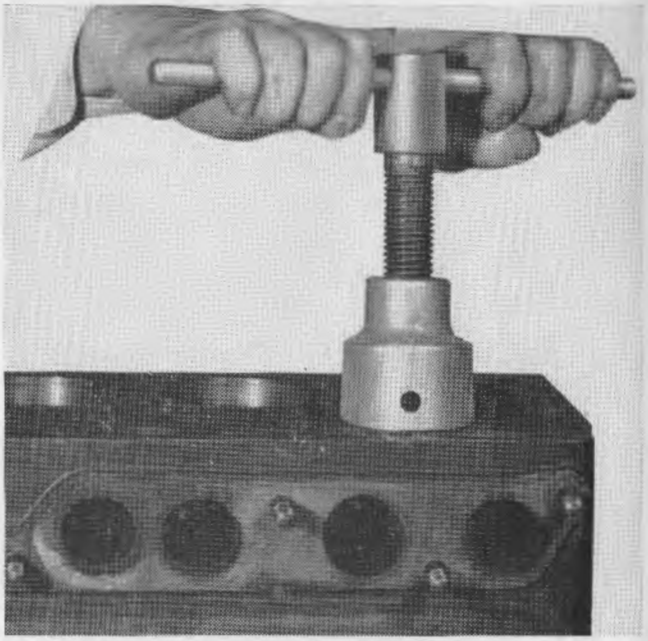
It is necessary in refacing the valves on the Packard Twelves to maintain the proper clearance between the valve locker lever and the valve stem, and in order to do this the equivalent of the stock removed from the valve seat must also be removed from the end of the valve stem. In order to determine this clearance, which should not be more than .060 nor less than .020, a depth gauge is required.

Vacuum Gauge

Tool No. S. T. 5045

Checking the motor efficiency by use of the vacuum gauge gives a true picture of the motor condition. Fluctuation of the needle indicates the actual condition of the valves, valve springs, spark plugs, distributor points, timing, carburetor, leaky gaskets, sticky valves, and in fact all conditions of the motor. Every gauge has a complete set of instructions explaining the different action of the gauge. It is very easily connected, as it fits on the windshield wiper connection at the manifold.

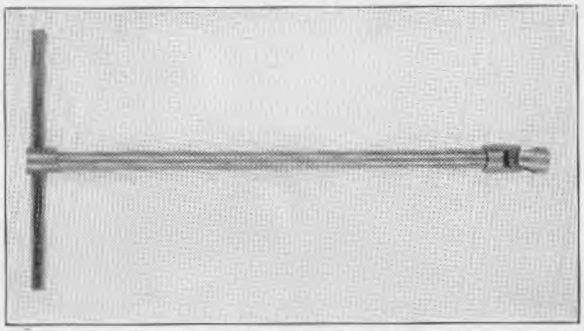
Valve Guide Puller



Tool No. S. T. 5038—Models 120-120B-120C-115C-1600-1601-1700-1701

This tool is invaluable for removing and replacing valve guides. The heat of the motor and the press fit of the guides combined, have a tendency to almost weld these parts in place. The long screw is made of a special steel designed to withstand the terrific pull required to perform this operation. This tool has a ball bearing thrust washer to relieve the strain. Installing new valve guides from below, pull the guides into the block until the dimensions are 9/16 of an inch from the machined surface at the valve spring seat to the lower end of the guide. The long pull screw is made of the best material available and will be replaced at a charge of $.75.

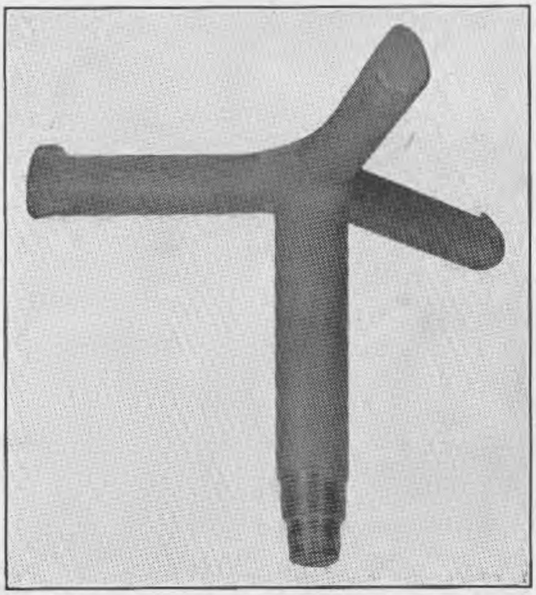
Inlet and Exhaust Manifold Socket Wrench



Tool No. S. T. 781
Tool No. S. T. 1391—Socket ½" Size
Tool No. S. T. 1470—Socket 9/16" Size

This universal joint wrench gives maximum speed with good leverage for removing intake and exhaust manifold nuts.

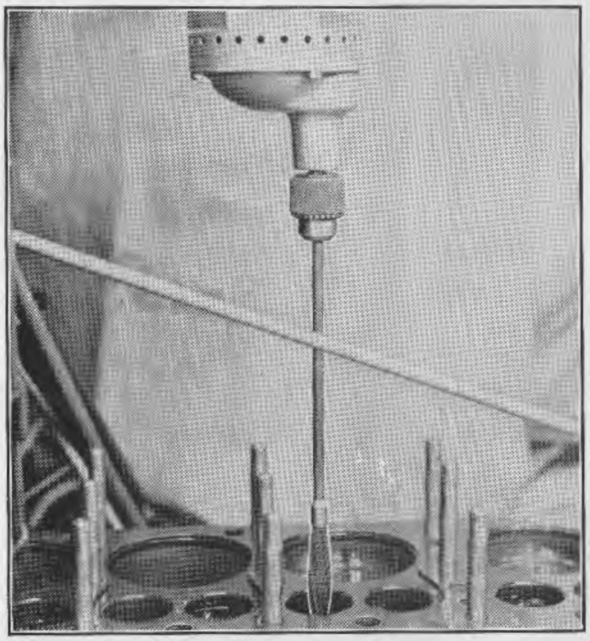
Stud Remover and Driver Cylinder Head Lifter



Tool No. S. T. 121—All Models (Except 10-mil)

For use on all Packard cars. The need for cylinder head lifters is especially apparant for the Packard Eight and Twin Six because of its weight and over-all length. Can also be used as a stand for cylinder head when removing carbon from head.

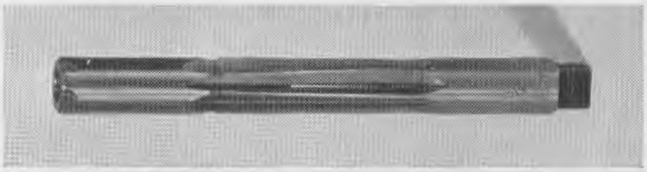
Valve Guide Cleaner



Tool No. S. T. 212—All Models

A valve guide cleaner that will not damage or enlarge the valve guide. When used in an ¼″ Electric Drill a guide can be cleaned in the length of time it takes to say it.

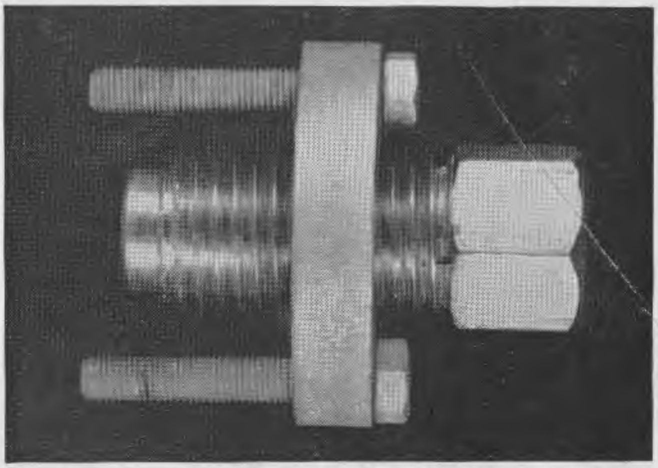
Piston Pin Bushing Reamer



Tool No. S. T. 832—All Models (⅞″ Pin)
Tool No. S. T. 833—All Models (¾″ Pin)

An expansion reamer for wrist pin bushings. An extremely accurate reamer having adjustment and expanding blades.

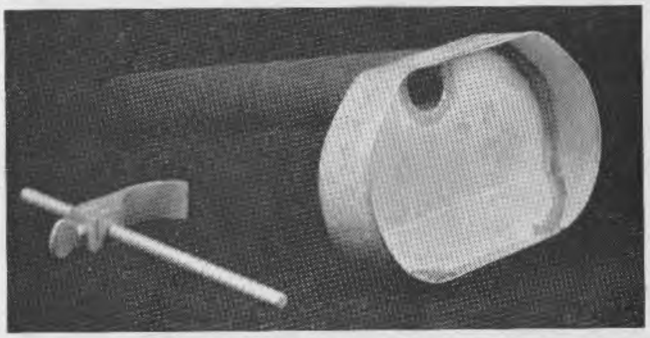
Vibration Damper Puller



Tool No. S. T. 856—Models 900-1200-1204-1400-5-1500-1507-1603-8-1708

This puller will remove the vibration damper without removing radiator.

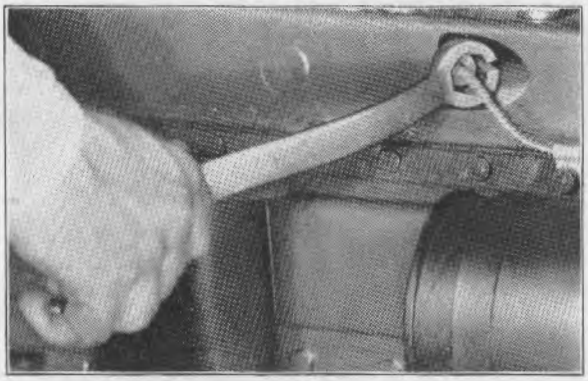
Cylinder Drain Cup



Tool No. S. T. 904—Model Twelve Only

It is designed to catch and carry away all the kerosene, dirt, and grindings removed from the cylinder bore. It eliminates the danger of kerosene and these grindings getting into the bearings or around the motor crankcase. It is quickly and easily attached, and is less work than packing the crankcase with rags. This tool assures a more satisfactory job.

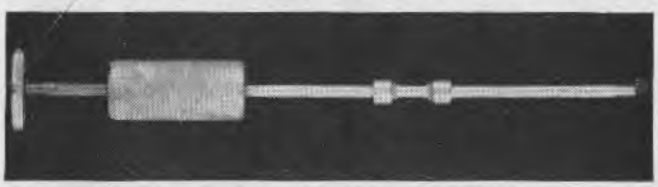
Combination Spark Plug, Anchor Bolt, and Thermometer Nut Wrench



Tool No. S. T. 734 $\frac{3}{4}''$ Hex.
Tool No. S. T. 737 $\frac{5}{8}''$ Hex.

The small end of combination wrench was especially designed so that when removing cylinder head thermometer tube flange nut you can always take a new bite.

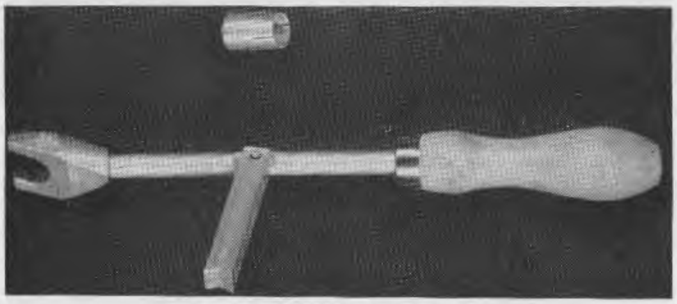
Valve Guide and Main Bearing Puller



Tool No. S. T. 863—Twelve

Insert the puller pilot into the valve guides and tighten with brass nut; the sliding handle is then allowed to drop against stop, jarring the valve guide loose in cylinder. This tool is also used for replacing valve guides and removing main bearing cap.

Valve Guide Lock Ring Replacer

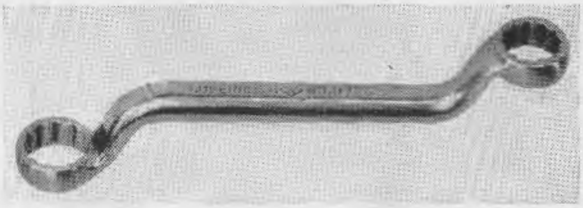


Tool No. S. T. 867—Twelve

This tool is used for replacing valve guide lock ring and is simple to operate:

1. Place lock ring on the top of the small end of the bushing.
2. Place bushing and ring on the valve guide.
3. Place the tool with the saddle on the valve guide bushing and with the leverage against the eye force the lock ring into place.

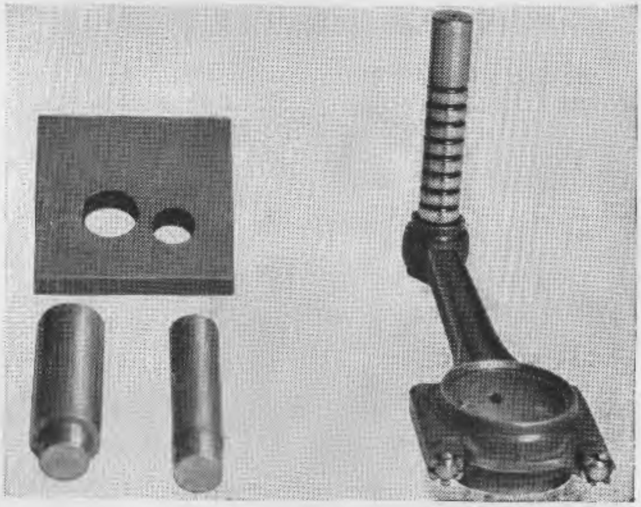
Piston Lubricator Valve and Exhaust Pipe Nut Wrench



Tool No. S. T. 763—($\frac{1}{2}''$ and $\frac{9}{16}''$ Opening)

This double hex wrench will remove the two rear exhaust pipe bolts and nuts, also piston lubricator nuts which are usually hard to remove with ordinary standard wrenches. This special wrench permits quick and easy removal.

Piston Pin Bushing Reconditioning Set



Models 120-120B-120C-115C-1600-1601-1700-1701

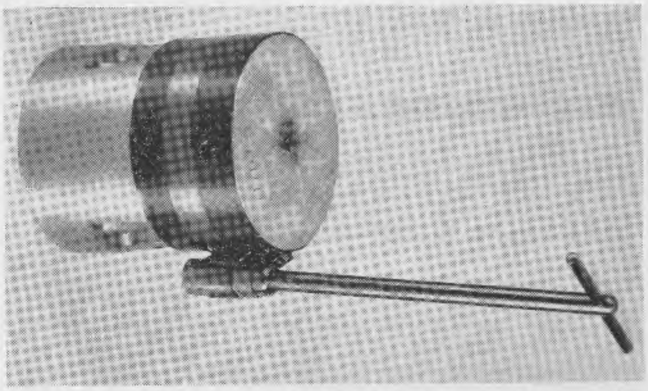
Consists of:
Tool No. S. T. 5041—Inc. Driver, Remover and Plate, Less the Burnisher
Tool No. S. T. 5008—Piston Pin Bushing Burnisher

The connecting rod bushings are very thin, being of the split type, and must be wedged tightly into the connecting rod before they can be successfully reamed. If bushings are not burnished or pressed tight against the connecting rod, they will come loose and close up the oil path, resulting in a burned out rod or scored pin.

An arbor press of at least five-ton capacity is necessary for burnishing. Place the small end of the burnisher into the bushing. Employ a fast even stroke, preferably pushing the tool clear through without interruptions, use plenty of soap water to cool and lubricate the tool.

The plate and arbors are used for removing and replacing the piston pin bushings.

Piston Ring Compressor



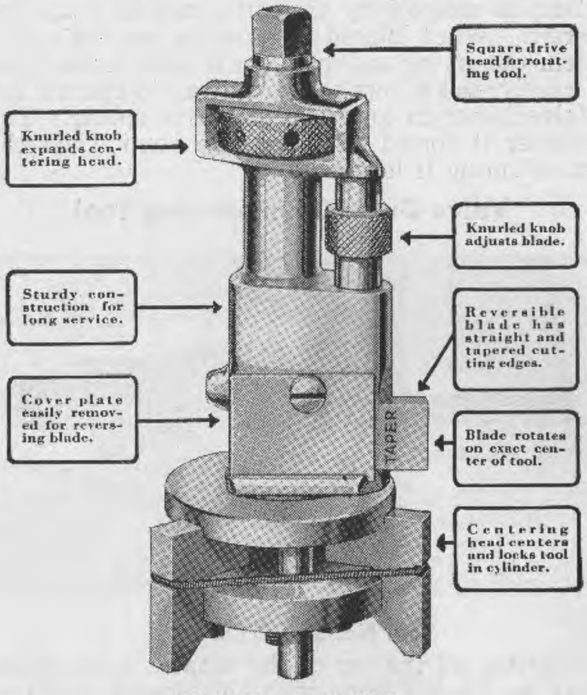
Tool No. S. T. 956—All Models Except Twelve

Place the compressor on the piston, tighten compressor by turning key to right until rings are compressed sufficiently to enter cylinder.

In loosening compressor turn key slowly to left. If loosened too rapidly the tension band may be damaged. Keep compressor free from dirt or grit between the tension band and compressor band.

This tool is of rugged construction and guaranteed against defect of workmanship or material. Like any good tool it should be used with care to insure long life.

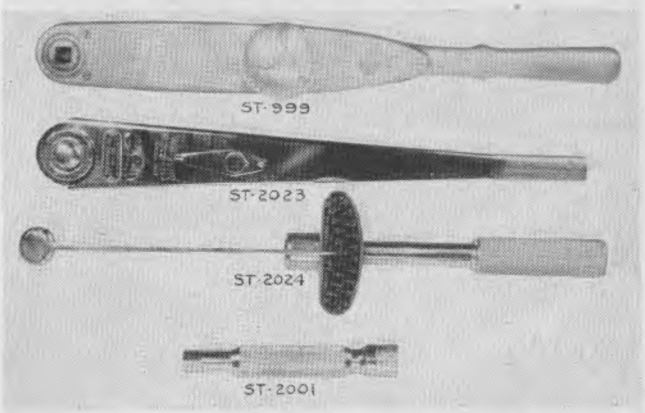
Cylinder Chamfering Tool


Square drive head for rotating tool.
Knurled knob expands centering head.
Knurled knob adjusts blade.
Sturdy construction for long service.
Reversible blade has straight and tapered cutting edges.
Cover plate easily removed for reversing blade.
TAPER
Blade rotates on exact center of tool.
Centering head centers and locks tool in cylinder.

Tool No. S. T. 885

This tool is set, centered and held in the cylinder itself, so that the exact shape and contour of the cylinder bore is accurately maintained. The expanding head is stationary, the blade rotating independently of the expanding head, providing a velvet finish and eliminating chatter.

Cylinder Head Nut Tension Indicating Wrenches



Tool No. S. T. 999—Tension Wrench
Tool No. S. T. 2023—Tension Wrench
Tool No. S. T. 2024—Tension Wrench
Tool No. S. T. 2001—Extension

(CHART)

S. T. 999—Dial Reading 150 to 170
S. T. 2023—Set Indicator at 60 to 70
S. T. 2024—Dial Reading 60 to 70

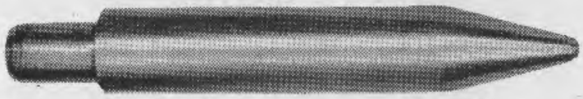
The chart above shows three different type tension wrenches with the recommendation for proper dial setting. The cylinder head nuts must be drawn down to a uniform tension as indicated on above chart.

Tool S. T. 2023 must be set as follows: Set the indicator between 60 to 70 on scale, operate wrench just as any ratchet wrench until the ratchet lever snaps over to the neutral position. There is a sharp "click" giving a signal to stop. Simply move the ratchet lever back and repeat on the next nut.

Tool S. T. 2024 has no moving parts accurately measuring torque by deflection of the tapered spring steel beam. The scale is calibrated in foot pounds and is easily read even with limited light. The small head, which is only slightly larger than a standard socket wrench, allows this wrench to be used in tight corners.

Tool S. T. 999 is calibrated to large easily read dial. Pull the handle until pointer on dial registers 150 to 170 as indicated on above chart. See service letter for detail information.

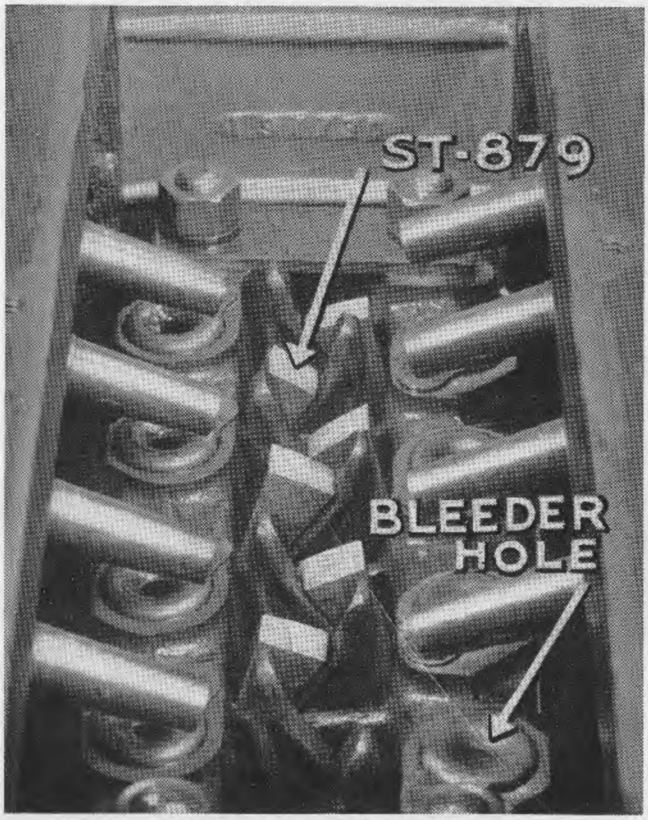
Connecting Rod and Piston Assembling Pin



Tool No. S. T. 726—All Models

It is somewhat difficult to assemble or disassemble the piston and pin with the connecting rod. Good results will be obtained only by having piston pin parallel with connecting rod.

Valve Rocker Lever Holder



Tool No. S. T. 879—Twelve

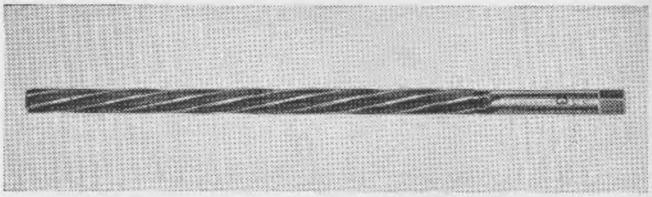
In grinding valves, it will be necessary to use S. T. 879 rocker lever wedges between the rocker lever and the crankcase. These will hold the rocker levers away from the valve so that clearance will be obtained. To install the wedge, it is necessary to bleed the automatic take-up piston in the rocker arm assembly. This is done by holding the bleeder valve away from its seat to allow oil to escape so that the lever can be pushed back. Use a round piece of ⅛″ stock and insert it in the rocker lever bleeder cap hole. Do not attempt to force the valve.

Feeler Strip

Tool No. S. T. 646 (.0015)
Tool No. S. T. 647 (.002)
Tool No. S. T. 166 (.003)
Tool No. S. T. 167 (.004)
Tool No. S. T. 648 (.005)
Tool No. S. T. 697 (.006)
Tool No. S. T. 5052 (.007″)
Tool No. S. T. 5054 (.008″)
Tool No. S. T. 5053 (.009″)
Tool No. S. T. 5061 (.010″)
Tool No. S. T. 962 (.015″)
Tool No. S. T. 969 (.020″)
Tool No. S. T. 5072 (.040″)

We are furnishing feeler strip by the running foot, as that is the most economical way that it can be supplied. You can then cut it to any desired length.

Valve Guide Reamer



Tool No. S. T. 5051—Models 120-120B-120C-115C

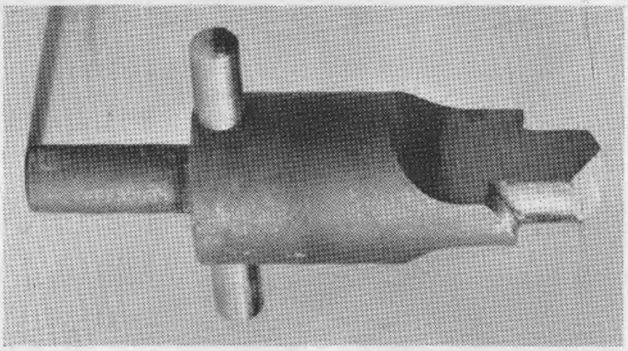
To eliminate noisy valves, it is often necessary to install new valve guides. After these guides have been pressed into the proper position, they are finish-reamed with this special reamer and should have about .0005 clearance at the bottom of the guide. These reamers are of solid type and the intake and exhaust valve guides can be reamed with the same tool.

Valve Key Inserter

Tool No. S. T. 864—Models 905-906

The split keys are easily mounted in the tool. Place the valve keys into the jaw leaving the keys clamped securely by the spring action of the inserter. When placed in position on the valve stem the spring action of the inserter holds them securely; this allows the hands free to operate the Valve Lifter in lowering the valve spring. The inserter is forced off the valve stem when the valve spring is lowered.

Valve Guide Counterboring Tool



Tool No. S. T. 5123

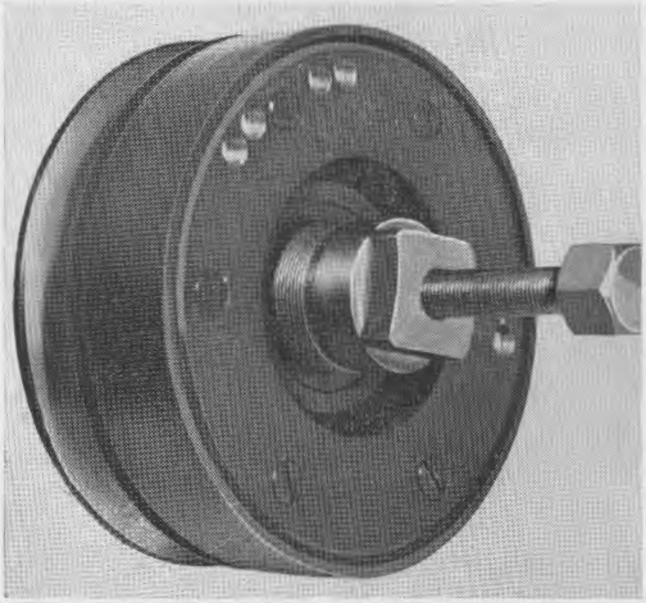
Cutting off the top of the exhaust valve guide may be quickly done with this special counterboring tool and a small electric drill.

The tool faces off the top of the valve guide and counterbores the top of the guide in one operation. The cross-pin in the cutter acts as a stop, when the correct depth has been reached.

The tool can be resharpened.

See service letter Vol. 12, No. 11.

Vibration Damper Puller



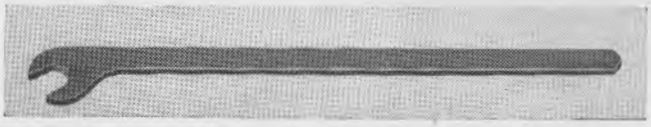
Tool No. S. T. 5002—Models 120-120-B

The vibration damper puller was designed to pull from center of the damper where threads have been provided for removing it. A puller of this type is indispensable. It will remove the damper without distortion or damage. To operate, screw the puller into the vibration damper and puller bolt against the crankshaft, then tighten the puller screw until the vibration damper drops off the crankshaft.

Valve Tappet Wrench

Tool No. S. T. 5001—Models 120-120B-120C-115C-1700-1701-1703
½″ and $\frac{9}{16}$″ Opening

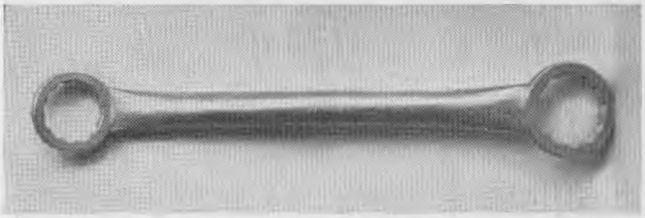
The valve push rods are of the barrel type. They revolve constantly when the motor is running and require three tappet wrenches for adjusting the tappet screws. One wrench to hold the push rod from turning, and two wrenches for adjusting the tappet screws.



Tool No. S. T. 5104—Models 1600-1601—
½″ Opening

Long handle tappet wrenches for adjusting tappets.

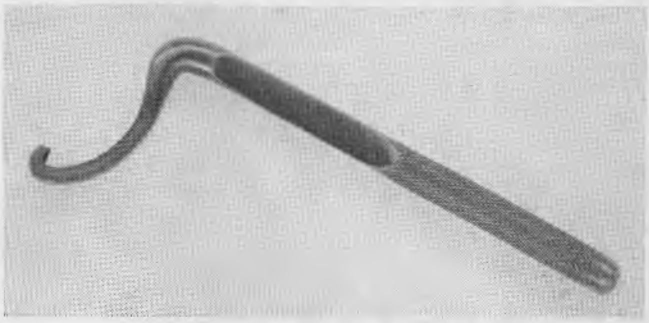
Oil Pump Pressure Relief Valve Body Nut Wrench



Tool No. S. T. 925—Models 905-1005-1100-1108

This is of a special design and will save considerable time in removing the nut for adjusting the oil pressure.

Water Pump Packing Nut Wrench

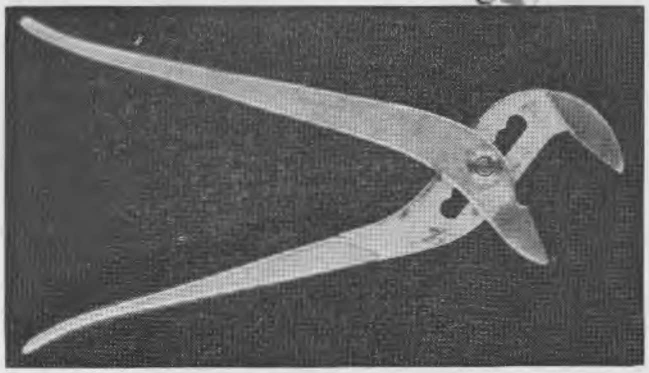


Tool No. S. T. 5070—Models 120-120B-120C-115C

Specially designed water pump wrench made of molybdenum alloy steel.

This has the proper angle and thickness to be able to remove, replace, and adjust the water pump packing nut on the One Twenty car.

Water Pump Packing Nut Pliers



Tool No. S. T. 2026—Pliers

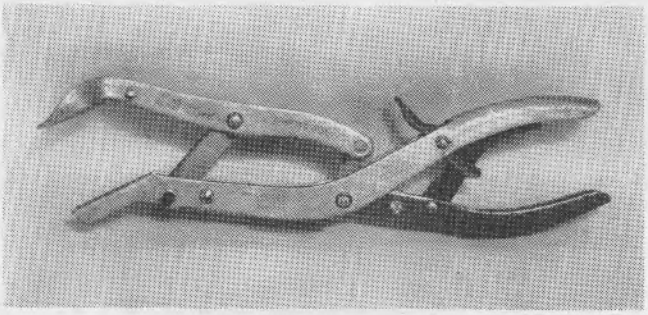
Models—Senior Eight and Twelve

Tool No. S. T. 805—1½″ 740-840-903

A very convenient plier to have around the shop, made in the notch slip joint style. Full length handle for good grip, jaws that will open for all size water pump packing nuts.

MOTOR

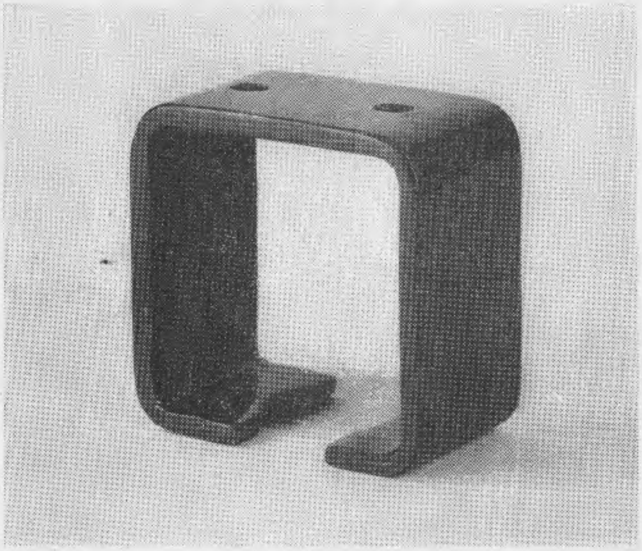
Valve Lifter



Tool No. S. T. 5109—Models 120C-115C-1600-1601-1700-1701

This hand valve lifter for 115C-120C-1600-1601 model cars allows plenty of working space and clear view of valve operation when working under fender. Especially good for getting in tight places but not as durable as our standard valve lifter.

Valve Puller Jaw



Tool No. S. T. 1398

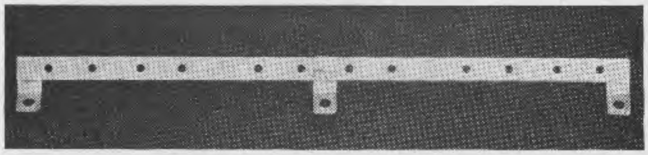
This clamp is used with S. T. 863 crankcase rear bearing cap puller to remove frozen valves and is very handy when the valves are stuck tightly in the valve guides.

Feeler Gauge Holder

Tool No. S. T. 153

Quick replacement of the feeler gauge is the big feature of this holder. It is not necessary to punch a hole in replacement strips when using this holder.

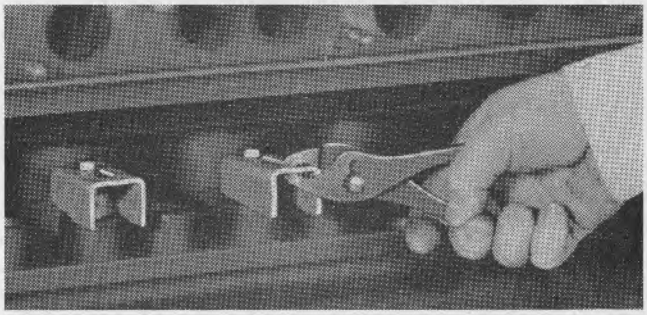
Valve Rack



Tool No. S. T. 874—Twelve

This rack will hold twelve valves; it is drilled so that it can be placed within easy reach on one of the center or two end motor studs and provides convenient means for removing valves to work bench for cleaning and refacing. Two racks are required.

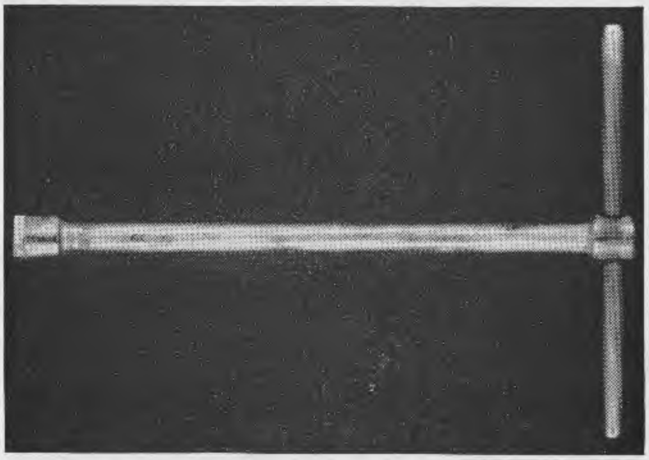
Valve Push Rod Holders



Tool No. S. T. 5019 (16 Holders Required)
Models 120-120B-120C-115C
Tool No. S. T. 5103—Models 1600-1601-1700-1701

This set of holders is indispensable when changing the camshaft. They will hold the push rods away from the shaft, allowing the removal or replacement of camshaft. These holders eliminate the necessity of removing the cylinder head, valves and springs.

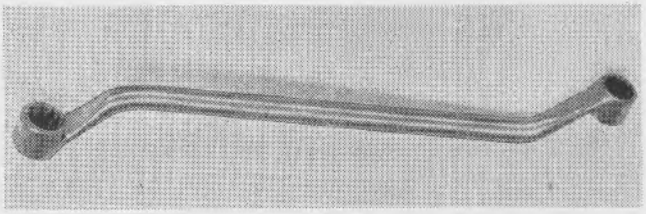
Valve Rocker Lever Housing Plug Wrench



Tool No. S. T. 866—Models 905-906

The "T" handle wrench is long enough to supply the necessary leverage to remove rocker lever plug when changing pistons and valves in the rocker lever block assembly.

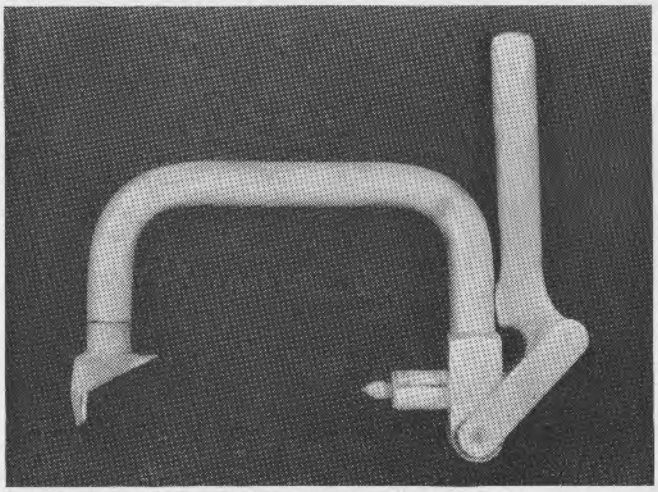
Cylinder Head Nut Wrench



Tool No. S. T. 908—All Models

Cylinder head nut wrench is used for removing the nut located between the two coils. Without this wrench, this nut is very hard to get at. The wrench can also be used for tightening cylinder head nuts on the Eight and the Twelve motors.

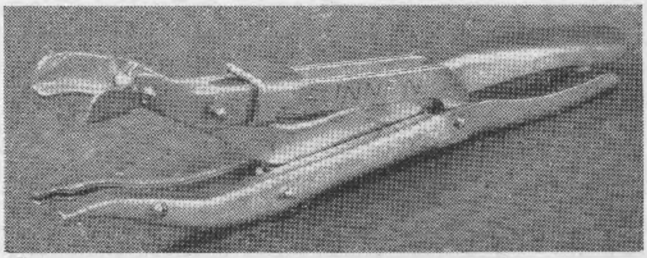
Valve Lifter



Tool No. S. T. 860—Twelve

A fast operating lifter that is especially designed with offset base for Twin Six; easily operated with one hand—allowing the other to remove and replace valve keys.

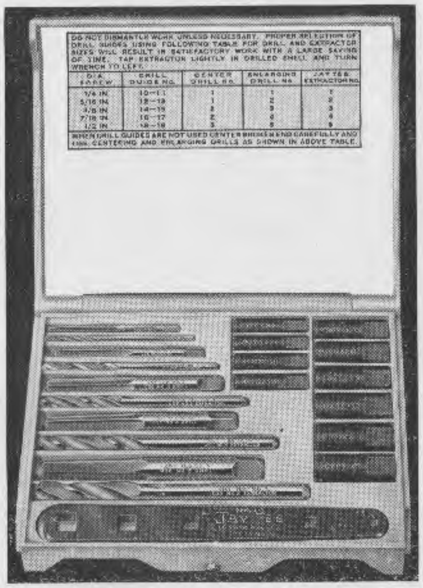
Valve Lifter—Heavy Duty



Tool No. S. T. 780—All Models

This lifter is twice as strong as the average lifter of this type and hss more leverage. The handle extends out beyond the manifold. It is adjustable and will last indefinitely as it has no wearing parts, such as ratchets and pin.

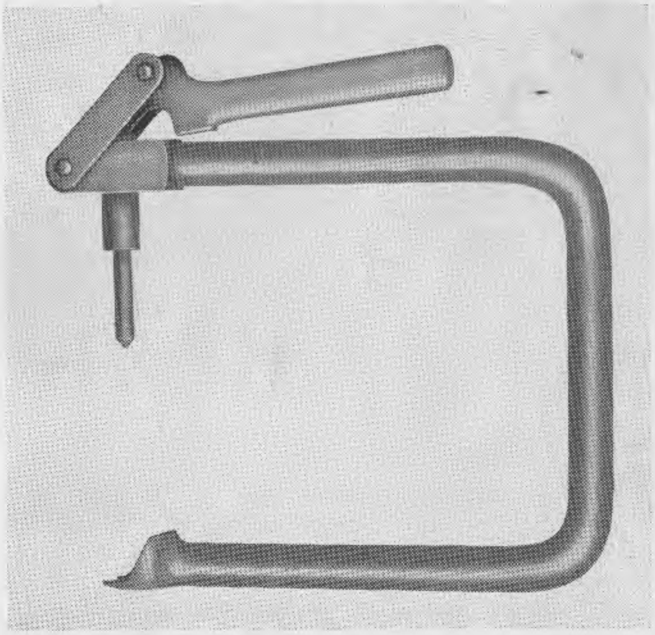
General Utility Extractor



Tool No. S. T. 831

This set consists of drills, drill guides, extractors, and a wrench for removing all diameter screws, ¼″ to ½″. Can be used to 1″ depth without dismantling. Box is die-cast aluminum.

Valve Lifter

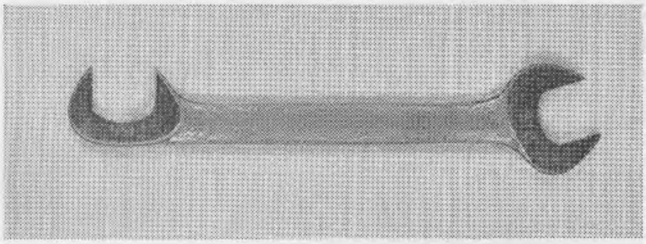


Tool No. S. T. 5036—Models 120-120B-120C

A fast, heavy duty lifter that is especially designed with offset base for removing and replacing valves on the One Twenty model.

The lifter will clear the manifold, and can be operated through the opening under the fenders. It is faster than the hand type which we have been recommending.

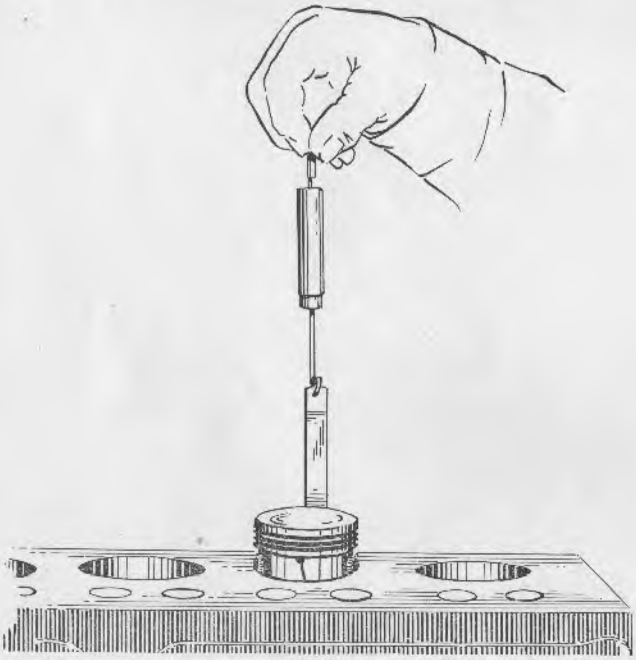
Distributor Housing Anchor Bolt Wrench



Tool No. S. T. 909—All Models

This is a special wrench and is required when retiming the distributor. You will find that the cap screws are so close to the distributor base that an ordinary wrench will not fit.

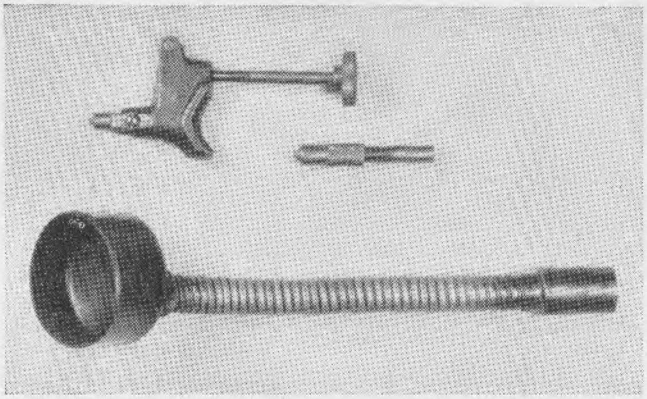
Piston Fitting Gauge and Scale



Tool No. S. T. 5034—Models 120-120B-120C-1601-115C-1600-1700-1701-1703

The capacity of this scale is 15 lbs., and is designed for measuring the clearance between the piston and cylinder bore, after a grinding or boring operation. It assures a uniform fit without the mechanic having to rely on his sense of feel for the necessary clearance. The feeler strip or ribbon is attached to the scale, the dial of which is marked in lbs. Place the feeler strip between the piston and cylinder wall and attach the scale at the end of the feeler strip. In pulling the strip from the cylinder, the dial indicator should register 3 to 5 lbs. This scale can also be used for measuring the pull on the outside of the steering wheel for proper steering gear adjustment.

Cylinder Drain Cup



Tool No. S. T. 5075—Models 120B-C-1601-115C-1600-1700-1701 After Motor No. 43882

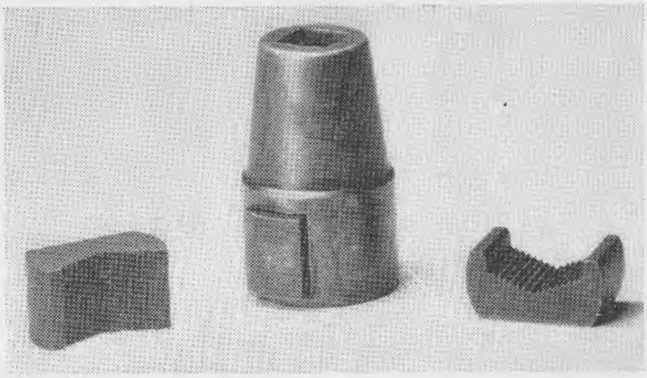
A drain that will catch and carry away all of the kerosene from cylinder, when homing cylinder bore. The abrasive dust or metal which is removed will accumulate in the cup and may be washed out when honing operation is completed.

Turn crankshaft to its lowest point, directly under center of cylinder to be honed. Place waste receiver cup up against lower end of cylinder, insert stud point into center hole of cup. Place the "V" clamp on the crankshaft and tighten in place.

Place a pail or any kind of receptacle so that the cup can drain through the flexible tube.

After honing is completed wash cylinder thoroughly with kerosene before removing waste receiver cup.

Stud Remover and Driver



Tool No. S. T. 5140

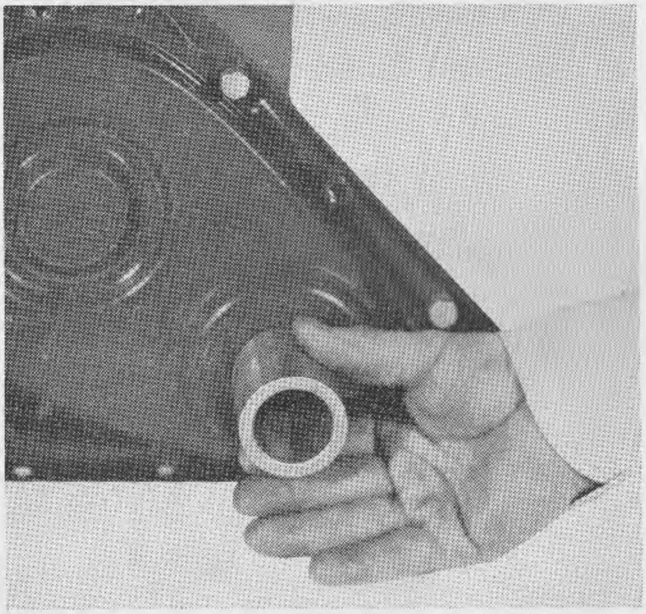
This tool is something new in stud remover design. It works satisfactorily for removing cylinder head studs.

This tool develops a tremendous gripping power which prevents slipping and quickly releases as soon as pressure is released.

The body and jaws are heat treated to make them tough and durable. With each tool you get three different size jaws for removing ¼″ to 5/16″—⅜″ to 7/16″—7/16″ to ½″ studs.

Any standard "T" handle square drive or ratchet wrench can be used with this driver.

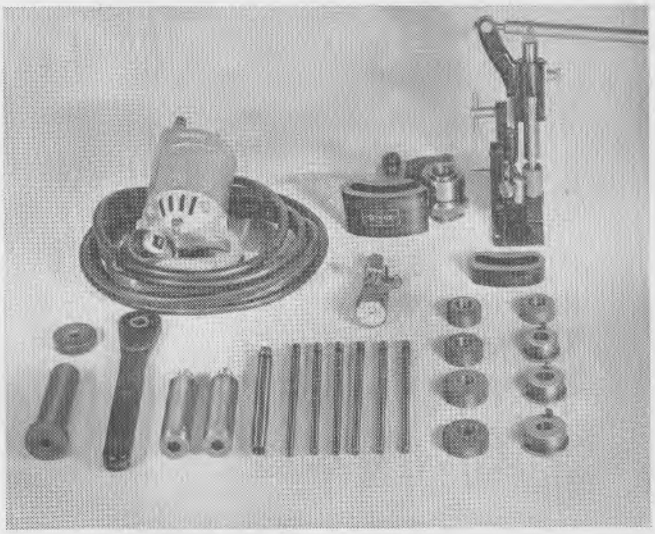
Timing Chain Cover Centering Gauge



Tool No. S. T. 5026—Models 120-120B-120C-115C-1600-1-2-1700-1701

To operate, slip the gauge on the crankshaft and use it as a pilot while installing the front cover. Leave the gauge in place until cover has been tightened securely. The installation of the cover in this manner insures a perfect oil seal.

Valve Seat Grinding Equipment



Tool No. S. T. 5016

Valve Seat Ring Equipment

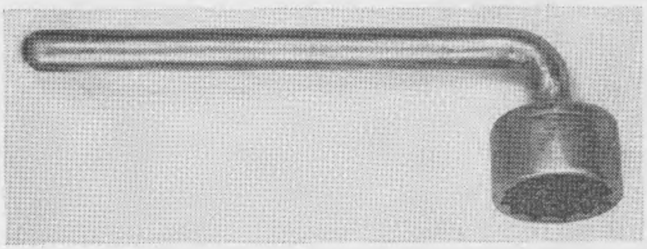
Tool No. S. T. 5079

We are advocating the grinding of valve seats instead of the old method of recutting, as we are doing at the present time. It is faster, more accurate, and gives less trouble as it is not necessary to send the cutter out to be sharpened. The stones can be kept at a correct angle by the fixture included in the equipment.

The set consists of:

1 High Speed Electric Drill Driver.
4 Valve Seat Stones—to cover all cars, including the "120". Sizes—45°—1½″, 30°—1⅝″, 45°—1⅝″, 45°—1%″.
1 Dressing tool for Stones—graduated so it can be set at an angle.
4 Special tapered pilots that can be used on tapered or straight guides—11/32+.000+.001+.002 and —.001.
1 Valve Seat Indicator.
1 Grinding stone holder and driver.

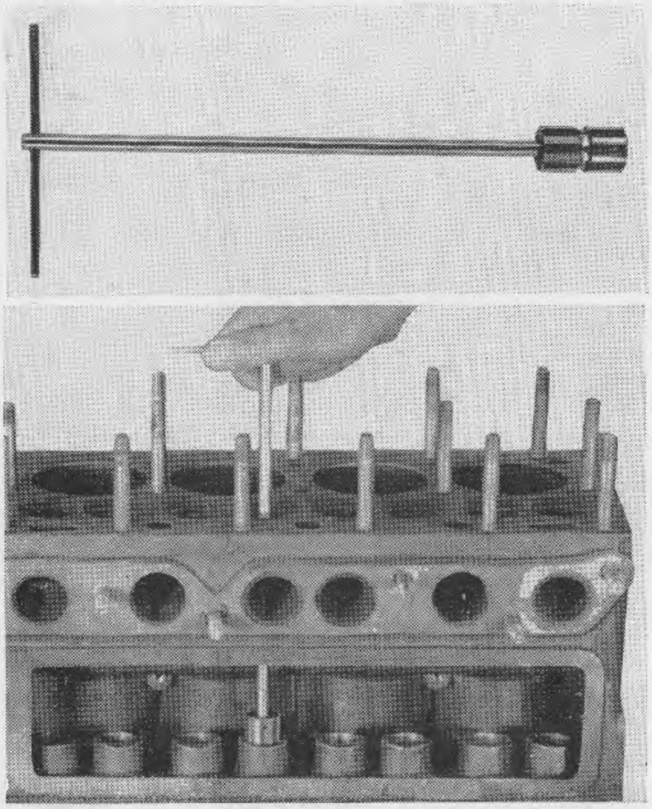
Vibration Damper Nut Wrench



Tool No. S. T. 947—Models Senior Eight and Twelve

You will require this tool for removing the vibration damper nut on Twelfth Series cars. It is a heavy duty wrench and will enable you to do this job without removing the radiator.

Valve Tappet Hole Reamer (.005″ Oversize)



Tool No. S. T. 5065—Models 120-120B-120C-115C
Tool No. S. T. 5101—Models 1600-1601-1700-1701

Line reaming equipment is absolutely necessary when installing .005″ oversize tappets.

This special reamer is designed to ream the tappet hole in cylinder block oversize for installing Valve Tappet—piece number 303834. It has a pilot which fits into the old tappet hole as illustrated in the above picture and the rest of the reamer does the cutting.

The pilot stem acts as a turning handle. It is placed through the valve guide and engages into the reamer slot.

This method insures the new hole being perfectly aligned with the valve guide.

Remove lower oil pan and place rags over the camshaft to prevent the metal chips or dust from falling over the camshaft.

Tappet hole reaming can be done without removing the camshaft.

(1) Run the cutter through the regular way until it strikes the camshaft.
(2) Turn the cutter upside down, and turn it anticlockwise so that it will make the hole up to size.

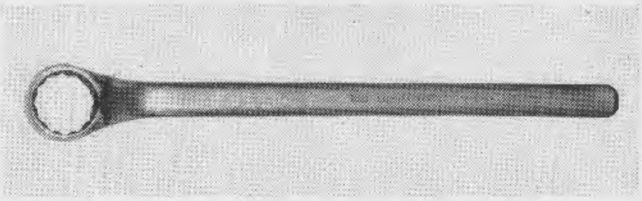
A little oil on the cutter will prevent chattering.

Before assembling, wipe out the guide hole with clean rags to make sure all cast iron dust is removed.

Carefully remove rags from camshaft and inspect to see that all chips and dust are removed.

Always be sure that your reamer is in good condition before doing this work.

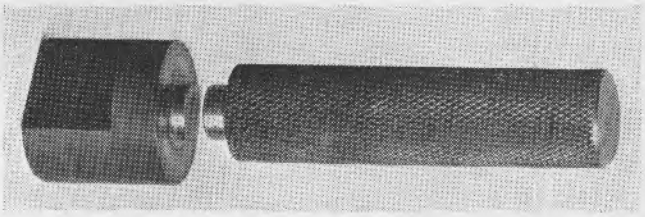
Vibration Damper Nut Wrench



Tool No. S. T. 5106—Models 120-120B-120C-115C-1600-1-1700-1701

This special wrench is an ideal tool for tightening the vibration damper nut without removing the radiator. The handle is offset so that it can go into the damper to remove or tighten the nut.

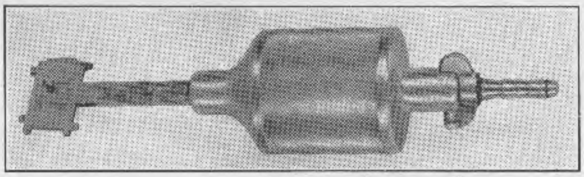
Valve Cover Punch and Anvil



Tool No. S. T. 744

In order to assist the service man in making a neat and efficient replacement of the cork gasket attached to the valve chamber cover, we have designed a special anvil and punch.

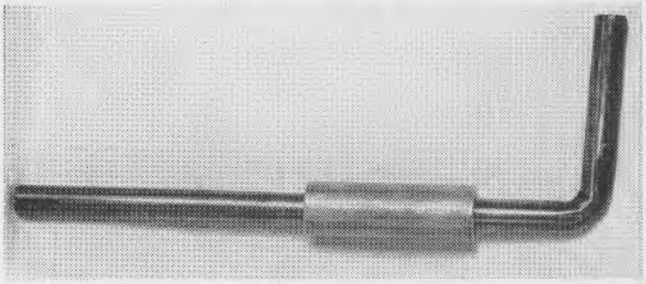
Valve Grinder



Tool No. S. T. 752—All Models

An 18 ounce machine operated by air pressure with adjustable control regulating speed from zero to three thousand, one quarter revolution per minute. This is a very smooth running machine for grinding and finishing valves and will complete the job in half the usual time. It is guaranteed for one year.

Oil Pump and Distributor Shaft Aligning Tool

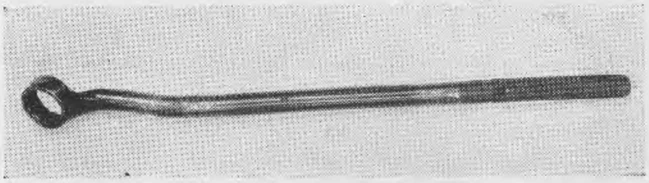


Tool No. S. T. 5082—Models 115C-120-120B-120C-1600-1601-1700-1701

This aligning tool speeds up the installation of the oil pump and the distributor assembly. It helps in locating the driving end of the oil pump shaft quickly. Instructions:

1. Turn motor until distributor rotor is on number one cylinder before removing oil pump and distributor.
2. When the oil pump is to be replaced, insert aligning tool into the crankcase, through the distributor shaft hole.
3. The end of the aligning tool has the word "TOP" indented on it.
4. Turn the oil pump shaft so that aligning tool slot enters into the oil pump with the word "TOP" held straight upward.
5. Install oil pump. The handle of the aligning tool should be hanging in a vertical position.
6. Replace distributor with rotor firing on number one cylinder.

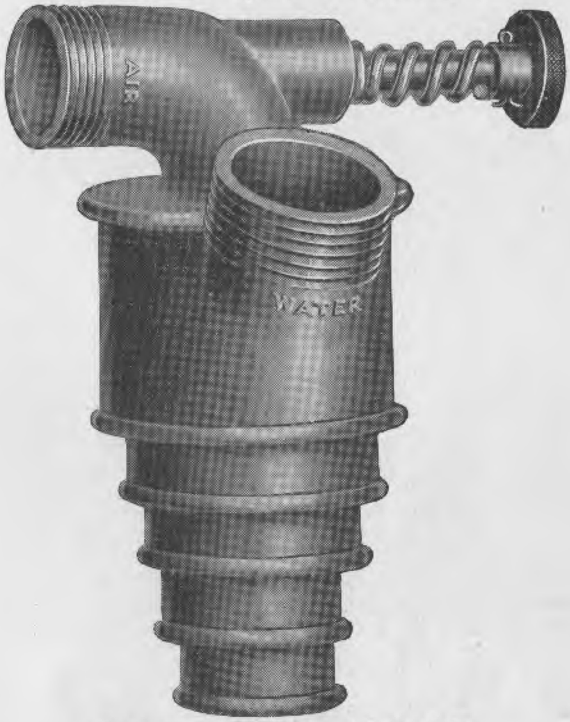
Radiator Anchor Nut Wrench



Tool No. S. T. 5122—Model 120-B-120C-115C

The radiator anchor nut is very hard to get at with an ordinary socket wrench, as it is located directly under the front cross-member. We are in a position to supply a wrench, which will let you get at this nut quickly.

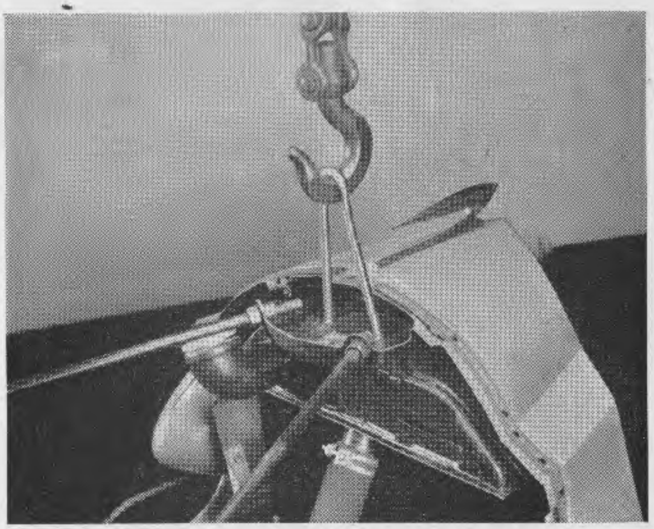
Radiator and Cylinder Flushing Tool



Tool No. S. T. 890—All Models

An efficient tool for cleaning and flushing the cooling system of rust and scale deposits that are constantly forming and building up in the cooling system, clogging the water passages and causing overheating. A combination of air and water is used to remove the deposits in the cylinder block and radiator.

Radiator Lifter



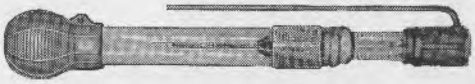
Tool No. S. T. 5057—Models 120-120-B

An efficient tool for lifting the radiator and fenders, as one assembly, off the chassis on the One Twenty model.

The lifter fits in the radiator tie rod bracket hole.

RADIATOR

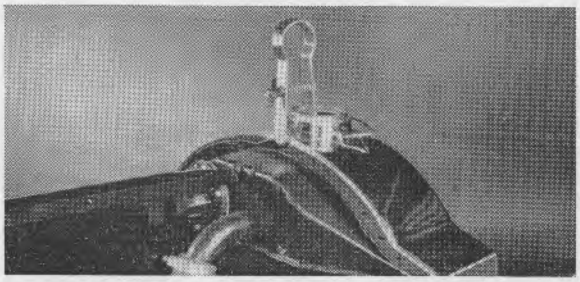
Radiator Hydrometer



Tool No. S. T. 753

Every dealer should have a radiator hydrometer in stock. The instrument readings are for all four solutions; alcohol, Prestone, Zerone and glycerine.

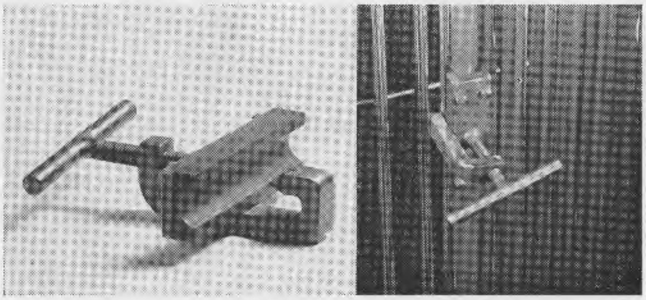
Radiator Lifter



Tool No. S. T. 838—Models 726-903, Inc.
Tool No. S. T. 851—Model 900

An inexpensive tool for lifting radiator off chassis. Place one end of lifter into bonnet hinge hole and the other end into radiator core. Then tighten lifter thumb nut.

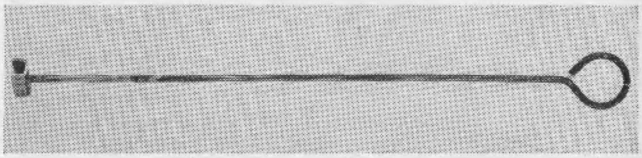
Radiator Shell Center Bar Clip Expanding Tool



Tool No. S. T. 937—Models 1100-1108-1200-1208
Tool No. S. T. 960—Models 1400-1403-1407-1408 1500-1508

In order to dismantle the radiator shell from the radiator, it is necessary to pry the radiator shell center bar loose from the radiator shutter. To assemble it is necessary to bend the three hold-down clips together, and then spread them after the shutter and shell are together. This special tool is used to spread the clips when assembling the radiator shell and shutter. It is placed between the shutter opening and holds the center bar and shutter while the clips are being spread. This prevents any rattle between the shell and shutter.

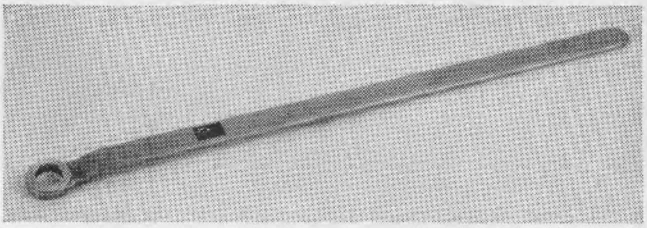
Radiator Drain Cock Wrench



Tool No. S. T. 5076—Models 120-120B-120C-115C 1600-1-2

The radiator drain cock on the 120 Model is very hard to get at. Here is a simple and desirable tool for opening and closing the radiator drain cock.

Radiator Shell Ornament Wrench



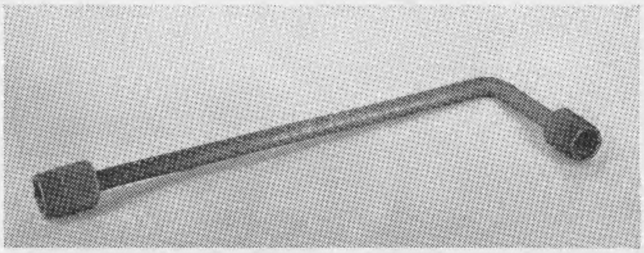
Tool No. S. T. 639—Models 120-120B-120C

A long wrench that will reach and loosen or tighten the screw on the radiator shell ornament without removing the radiator shell.

Remove the two front bonnet screws at radiator shell. Use S. T. 639 Wrench—and loosen screw enough so that the ornament can be removed from radiator shell slot.

This wrench was designed for tightening the camshaft rear bearing plate and therefore has a double use.

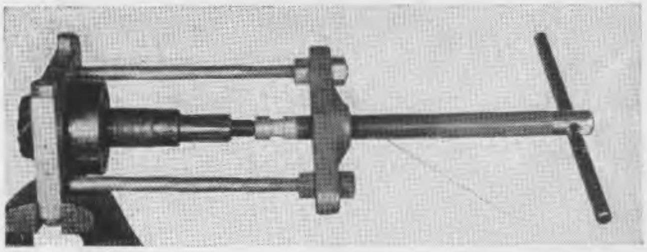
Radiator to Dash Tie Rod and Spring Bolt Nut Wrench

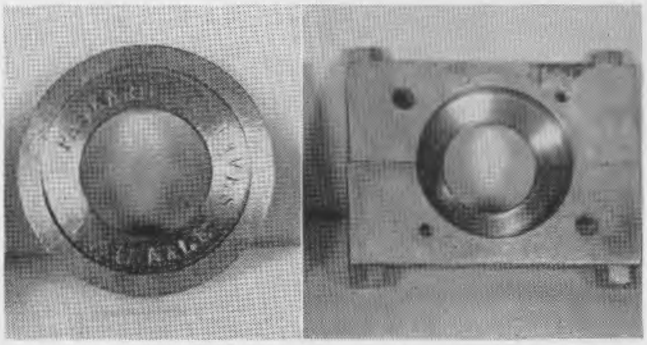


Tool No. S. T. 821—Models 901-903-1001-6-1100-8-1200-8-1400-8

The nut which tightens this rod is located in the glove compartment and it is necessary to have a socket wrench 15 inches long so that you can clear the instrument board when tightening. The rear car springs are now located on the outside of the frame and the other end of this wrench will clear the frame and will tighten or remove this nut.

Differential Pinion and Rear Axle Shaft Bearing Puller





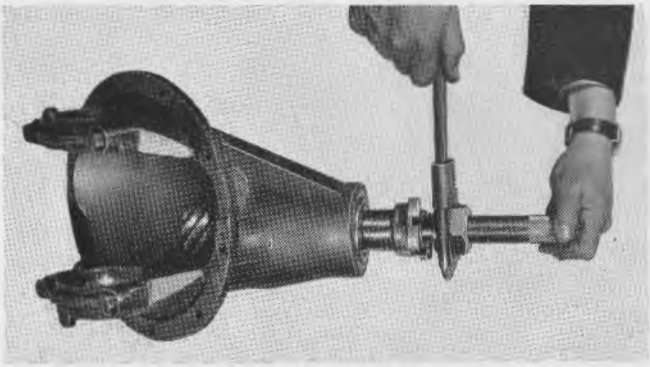
Tool No. S. T. 5088—Models 120-120B-120-C-115C 1600-1601-1700-1701-1703

Consists of: Puller, Base, Adapter

It is extremely difficult to remove the pinion bearing without this tool. Remove the two halves and place them between the pinion bearing and pinion gear. The two screws must be drawn up tight.

This will replace the differential pinion bearing. and will also remove the rear axle shaft bearing.

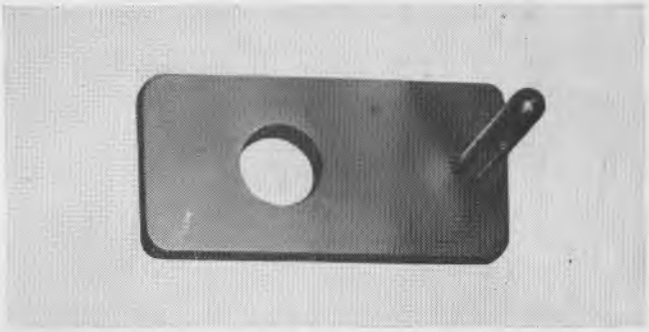
Differential Flange Replacing Tool



Tool No. S. T. 5113—Models 120-120-B

The use of this tool is very important when replacing the differential pinion flange. This tool insures an even pulling and pushing pressure on the pinion during the whole operation, safeguarding against the chance of crushing the ring gear or pinion teeth. Screw the flange replacing tool to the pinion shaft and tighten the driven nut which pushes the flange in place. When it becomes necessary to remove the differential flange, use Flange Puller—Tool No. S. T. 124.

Rear Axle Shaft End Play Checking Fixture



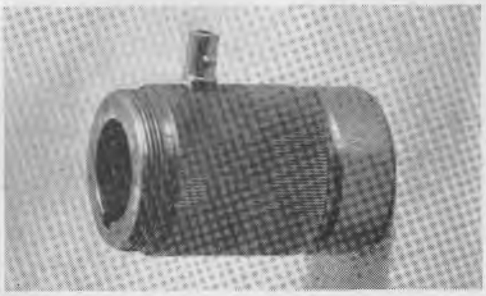
Tool No. S. T. 5112—Models 1600-1601-1700-1701-1703

Whenever a differential or rear axle shaft operation is performed the rear axle shaft must be checked for end play.

The axle shaft must be installed in rear axle case. Place the sliding bear handle S. T. 928 and adapter S. T. 1442 on the rear axle shaft (these parts are now carried under S. T. 2016), give two or three raps on each axle shaft with the ram and this will show the over-all end play.

Place the checking tool on axle shaft and fasten it with rear axle shaft nut, adjust the long screw so that it will just touch the support plate, then grip the tool with your hand and pull the axle shaft outward. Use feeler gauge and check the clearance between the end of screw and support plate. The end play should be .004″ to .007″.

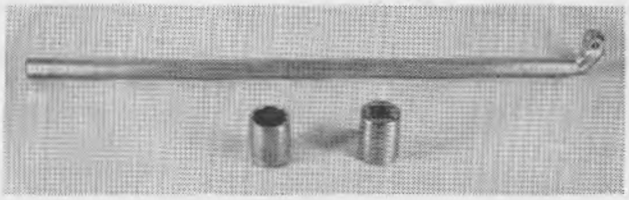
Rear Axle Shaft Bearing Lubricator Sleeve



Tool No. S. T. 933—Models 1001-3-1100-3-1200-3-1400-5-1500
Tool No. S. T. 940—Models 640-645-740-745-840-845-903-4-5-6
Tool No. S. T. 941—Model 900
Tool No. S. T. 942—Models 726-826-901-902
Tool No. S. T. 943—Model 626
Tool No. S. T. 944—Models 1005-6-1107-8-1207-8-1407-8-1507
Tool No. S. T. 5100—Models 1600-1601-1700-1701

This tool is used for greasing rear axle shaft bearings, without removing the axle shaft, by removing both rear brake drums, then placing the sleeve on axle shaft, and use high pressure grease gun.

Differential Pinion and Transmission Flange Nut Wrench



Tool No. S. T. 5084—Models 120C-115C-1600-1601-1700-1701-1703

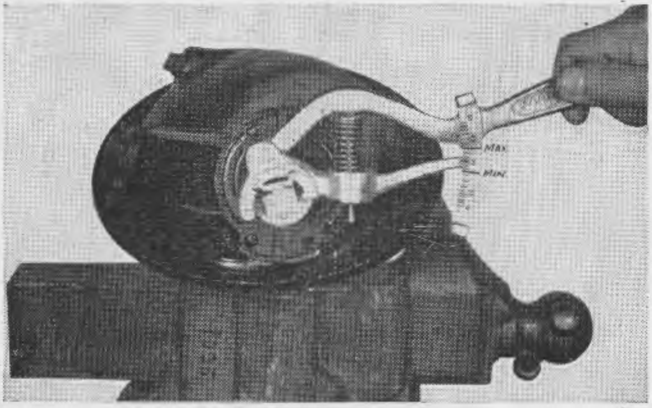
S. T. 10032—Socket $1\frac{3}{16}$—115C
S. T. 10033—Socket 1¼—All Models

Special socket wrenches for tightening the differential pinion flange nut for preloading the pinion bearing.

The handle is 24 inches long, with leverage to pull 16,000 lbs., and the pinion bearing collapsible sleeve must be accurately adjusted with this socket wrench to get the correct reading, as explained under Pinion Bearing Tension Scale—Tool No. S. T. 5087.

The $1\frac{3}{16}$″ socket wrench is used for removing and replacing transmission flange nut on Packard 115C model.

Differential Pinion Bearing Preloading Scale



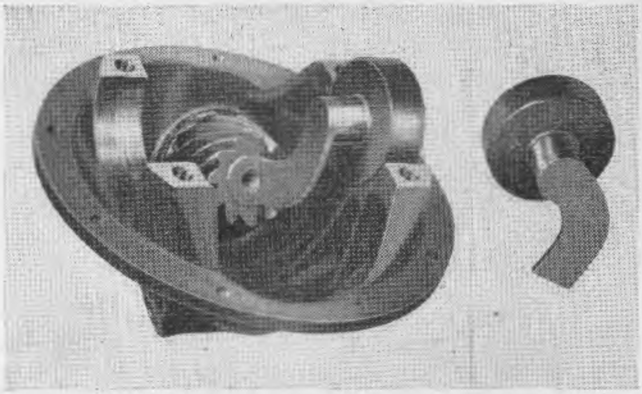
Tool No. S. T. 5087—Models 120C-115C-1600-1601-1700-1701-1703

The pinion bearing scale measures the amount of effort required to turn the pinion after the universal joint flange nut has been properly adjusted. This tool enables any mechanic to get the correct preloading without any guesswork.

Instructions:

1. Remove socket from wrench S.T. 5084 and place it on the end of the pinion bearing scale.
2. Place the scale on the universal flange nut.
3. Turn the pinion shaft with scale attached.
4. Tighten the flange nut with S. T. 5084 so that collapsible sleeve is adjusted and registers on the pinion bearing scale from 27 to 36 lbs. Anywhere in between 27 or 36 lbs., is satisfactory adjustment.

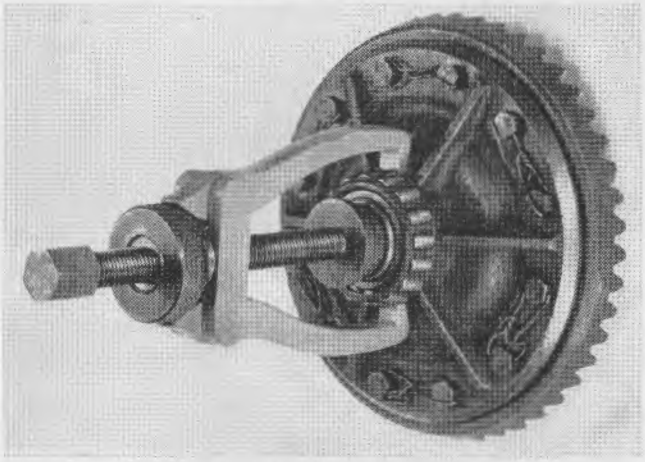
Differential Pinion Setting Gauge



Tool No. S. T. 5044—Models 120-120-B

This entirely new gauge determines approximately the position of the pinion in relation to the center line of the ring gear. Place the gauge into the adjustable ring gear bearing housing. The face of the gauge must come flush with the face of the end of the pinion. When the pinion is assembled, proper shims must be placed in back of the outer race of the large bearings so that the pinion comes flush with the gauge. Every shop should appreciate the amount of time that can be saved in using this gauge in locating the position of the pinion.

Differential Side Bearing Puller



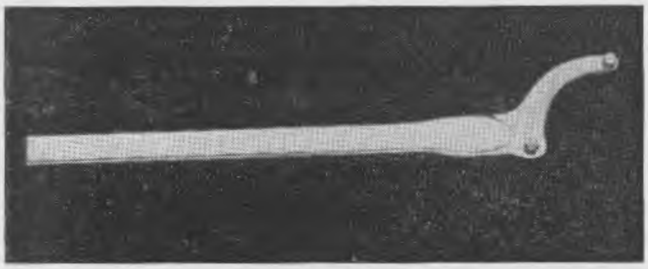
Tool No. S. T. 5086

Service Shops cannot afford to be without this differential bearing puller. These tools ofren more than pay for themselves on the first job. They are a saving of time over any other method.

The bearing puller is so designed that it will pull the bearing cone without damage. The puller arms should be placed behind bearing at the point where the two recesses are cast into the differential housing.

The puller arms are adjusted by turning the upper large center nut, and it prevents slipping, because the tighter the nut, the tighter the grip.

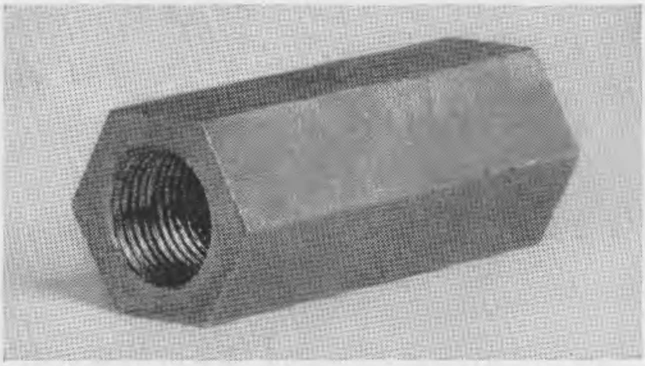
Differential Side Bearing Adjusting Wrench



Tool No. S. T. 848—Models 900-1001-3-1100-3-1200-8-1400-8-1500-1508

This wrench is used to turn the differential carrier bearing adjusting nut in order to get the proper bearing adjustment. It is made to fit into the slots in the adjusting nut to prevent slipping.

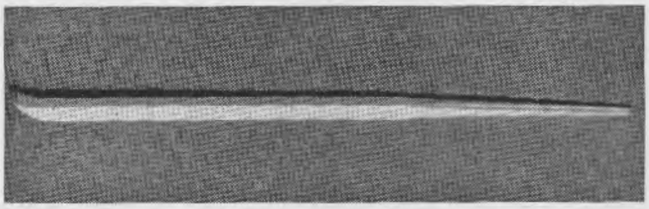
Rear Axle Shaft Puller Adapter



Tool No. S. T. 1442—Models 900-1001-1004-1100-1105-1200-1205-120-120B-120C-115C-1600-1601-1700-1701-1703
Tool No. S. T. 1443—Models 626-640-726-740-826-840-901-903-906-1005-1006-1107-1108-1206-1208-1400-8-1500-1507-1603-8-1708

These adapters are to be used with tool S. T. 928 rear axle shaft bearing cup puller. You first remove the shaft and the ram from the puller S. T. 928, and then screw on the adapter. Attach the adapter to the axle shaft, and a sharp rap with the ram will remove the shaft.

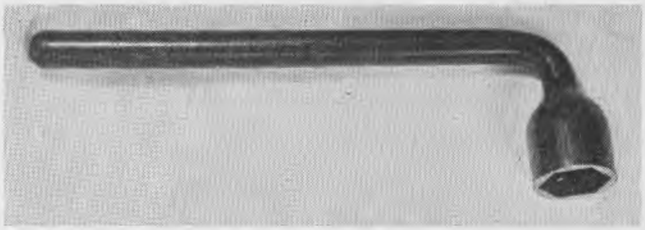
Mechanic's Pry Bar



Tool No. S. T. 903

A combination pry bar 18" long made of tool steel carefully tempered and hardened to give toughness.

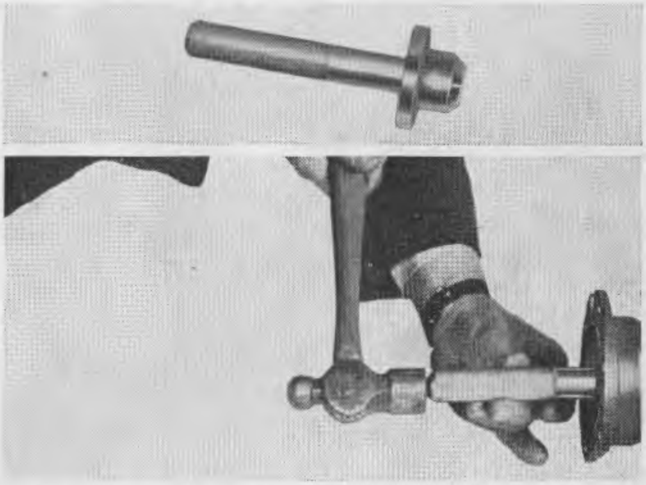
Rear Axle Shaft Nut Wrench



Tool No. S. T. 133—Models 740-840-903-5-1005-1107-1207-8 $1\frac{7}{8}$" size
Tool No. S. T. 748—Models 726-826-901 $1\frac{5}{8}$" size
Tool No. S. T. 849—Models 900-1001-4-1100-4-1200-4-1700-1701-1703 $1\frac{1}{2}$" size
Tool No. S. T. 5000—Models 120-120B-120C-115C 1600-1601 $1\frac{1}{4}$" size

A heavy duty wrench, designed to give extra long life. It is made with an offset, so that the axle shaft nuts may be removed without removing the wire wheel.

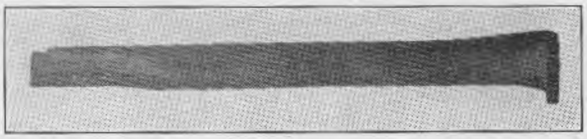
Rear Axle Shaft Oil Seal Drift



Tool No. S. T. 5050—Models 120-120B-120C-115C-1600-1601-1700-1701-1703

It is exceptionally important that the new oil seal used on these models be installed correctly. The only way to do this efficiently is to use this drift. If the oil seal is allowed to misalign itself in the housing, it will cause an oil leak.

Shock Absorber Offset Screwdriver

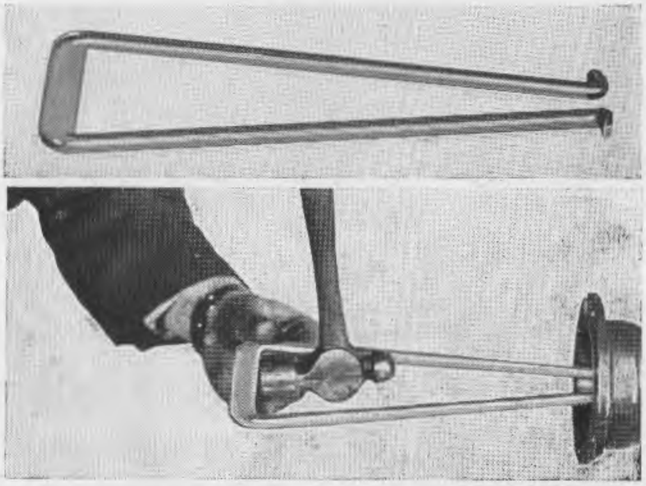


Tool No. S. T. 784—Models Eight-Twelve

The shock absorber plugs are so tight that it requires a special screwdriver to remove plugs.

REAR AXLE

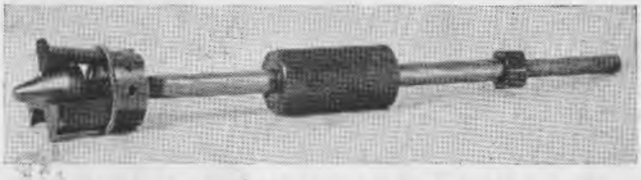
Rear Axle Shaft Oil Seal Assembly Removing Tool



Tool No. S. T. 5029—Models 120-120B-120C-115C-1600-1601-1700-1701-1703

The illustration shows how the oil seal assembly may be very quickly removed. The jaws are compressed and inserted back of the oil seal and by tapping the end of the puller with a hammer, it is easily removed.

Rear Axle Shaft or Bearing Cup Puller

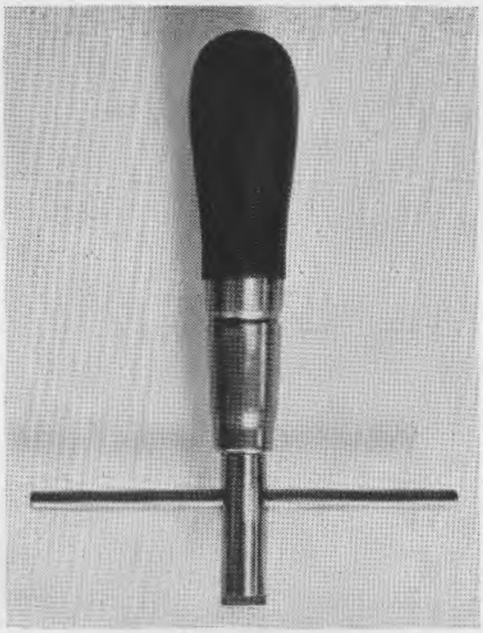


Tool No. S. T. 928—Models 1001-6-1100-8-1200-8 1400-8-1500-1507-1603-8-1708

Anyone who has removed the rear axle shaft bearing cup realizes it is a very difficult operation. We have designed a special puller with three expansion jaws made of tool steel which makes them light, tough, and hard. These three jaws have a 45° angle and are set on the outside of a 45° angular block, and when this block is adjusted, it expands the jaws in back of the bearing cup. The sliding bar handle, which is part of the tool, is used as a ram to remove the cups.

SHOCK ABSORBER

Shock Absorber Valve Stem Wrench



Tool No. S. T. 5107—Model 1601

The first step in changing the valve is to remove the wheel and thoroughly clean the shock absorber of all dirt around the valve plug. Since the orifices in the shock absorber are very small, and even a little amount of dirt may ruin its operation, cleanliness is of prime importance.

The shock absorber valves can be changed right on the car. To do this, use ¾" socket wrench and remove hex head screw on the end of shock absorber. Insert the special valve stem wrench in the opening. Unscrew the valve assembly until the head of the valve is flush with the end of the shaft.

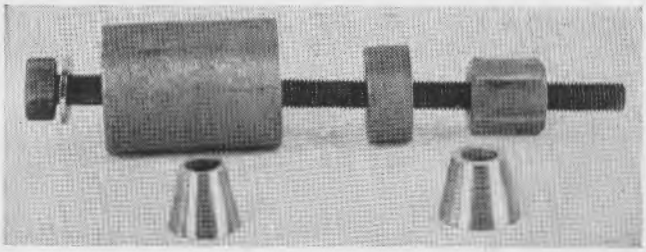
Before completely removing the valve, the new valve should be prepared by submerging it in Packard-Houdaille oil with the threaded end down. This allows the fluid to take the place of the air in valves and lessens the amount of air which has to be pumped out later.

The old valve should be removed and the new valve inserted in its place, as quickly as possible, so as to keep the fluid lost at a minimum. Be sure that the small gasket on the end of the valve assembly is removed with the original valve, if not, it can be removed by hooking it with a piece of wire.

The new valve should now be drawn up until it just starts to seat, then tightened about 30° more. It should not be drawn up tighter than that amount as it might buckle the valve tube if it is drawn down too tight.

It may be necessary to pump the lever up and down until all of the air is pumped out, then add enough shock absorber oil to level.

Shock Absorber Arm Rear Bushing Puller

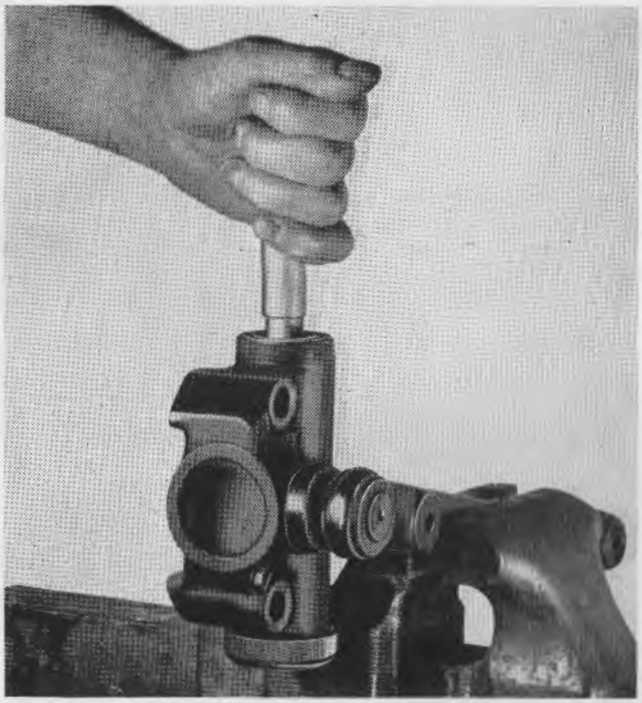


Tool No. S. T. 975—Model 120-120B

A special tool has been developed to remove and replace the new style rear shock absorber arm bushing on the 120 and 120B, without removing the shock absorber from the car.

This tool will also remove or replace rubber grommet and sleeve in shock absorber on the Senior cars. The picture shows two different size taper pilots to be used in changing grommet sleeve.

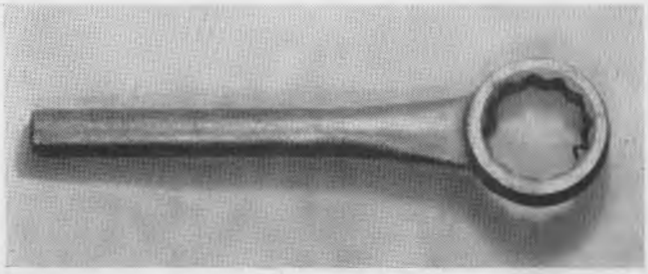
Shock Absorber Rebound and Compression Valve Replacing Tool



Tool No. S. T. 5023—Models 120-120B-120C-115C 1500-1600-1700-1701-1703

In order to remove the valves, first use shock absorber cover wrench S. T. 5005, and then pry loose the locking ring that holds the valve in place, using a screw driver. For reassembling, place the valve into the shock absorber with locking ring in same position it was when removed. Then use the valve replacing tool and tap the tool with hammer. You will find that the locking ring will snap into position.

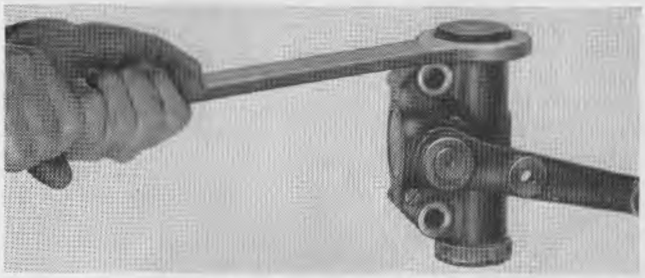
Shock Absorber Camber Pilot Nut Wrench



Tool No. S. T. 2015—Twelve

Whenever it is necessary to change camber pilot on the front shock absorber on 1508-1608 models you need a heavy duty wrench 12″ long, to work under the front fender for removing shock absorber lever inside nut.

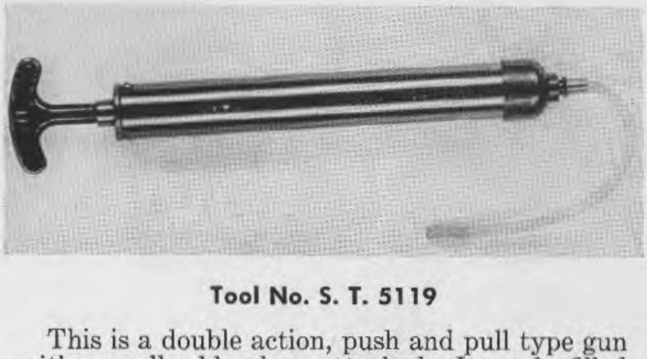
Shock Absorber Cover Wrench



Tool No. S. T. 5005—Models 120-120B-120C-115C 1500-1600-1700-1-3

A special tool with long handle for leverage must be used in order to remove shock absorber cover. Avoid loss of time in trying to remove the cover without this special wrench.

Shock Absorber Fluid Gun



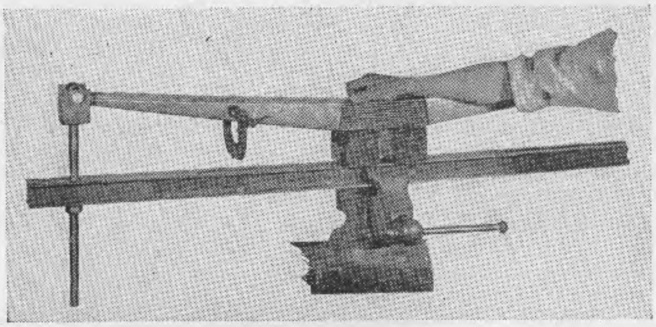
Tool No. S. T. 5119

This is a double action, push and pull type gun with a small rubber hose attached. It can be filled by either suction or removing the knurled nut.

Cleanliness is essential when refilling shock absorbers. Be sure to clean away all dirt so that it will not fall into the opening.

The gun will pay for itself in a short time by labor savings and the amount of fluid it saves.

Spring Depressing Tool



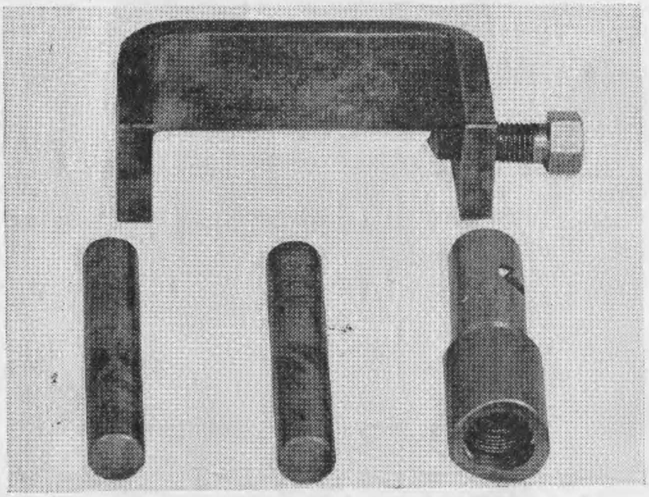
Tool No. S. T. 5069—Models 120-120B-120C-115C-1500-1507

Either the installation of spring covers or of the rear spring itself is a rather difficult job unless the spring has been deflected to the loaded position.

The tool shown reduces the time for replacing the cover to a minimum and allows the operation to be done without damage to the cover. Use a screw driver or chisel, raise the cover ends upward on both sides. Then slide the spring cover from lower assembly.

This tool has two long bolts with a yoke on one end and a thread on the other. The yokes are fastened to the spring eyes and the bolts placed through the channel iron. By taking up on the nut under the channel iron, the spring is straightened out. This allows the mechanic to remove the spring cover.

Rear Spring Shackle Tool



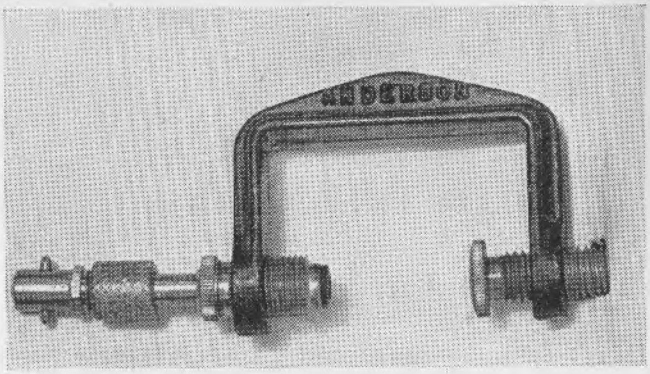
Tool No. S. T. 5096—Models 120B-120C-115C

The rear spring shackle installing tool consists of clamp, jack, and two aligning pins.

Before removing the spring shackles, place the little jack between the spring and the upper bracket rivet. Then remove the spring shackles.

Place shackles and cork gasket in position with the aligning pins through the shackle holes, then compress shackles with above clamp. This will line up these parts so that the spring bolts can be installed.

Spring Cover Lubricating Tool



Tool No. S. T. 958

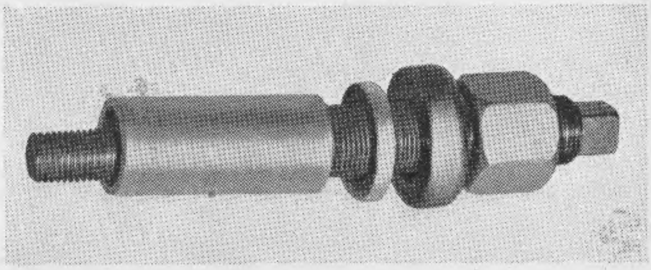
Car springs sometimes become dry, even though they are equipped with metal covers. When this occurs the spring leaves move sidewise, and make a very unpleasant noise. We have adopted a simple "lubroclamp" so that by drilling a hole into the cover, or using the hole which has been provided in the cover of the One Twenty, you will be able to grease the springs under pressure.

It is necessary, however, to raise the car at the frame, allowing the springs to sag. This separates the leaves so that you can properly lubricate the springs.

This price includes a bag of fifty (50) "lubroplugs." These plugs are to be inserted in small hole drilled in the spring cover and stop the grease from coming out. When purchased separately these plugs are $1.50 a bag less 30 per cent.

Full instructions are enclosed with every clamp.

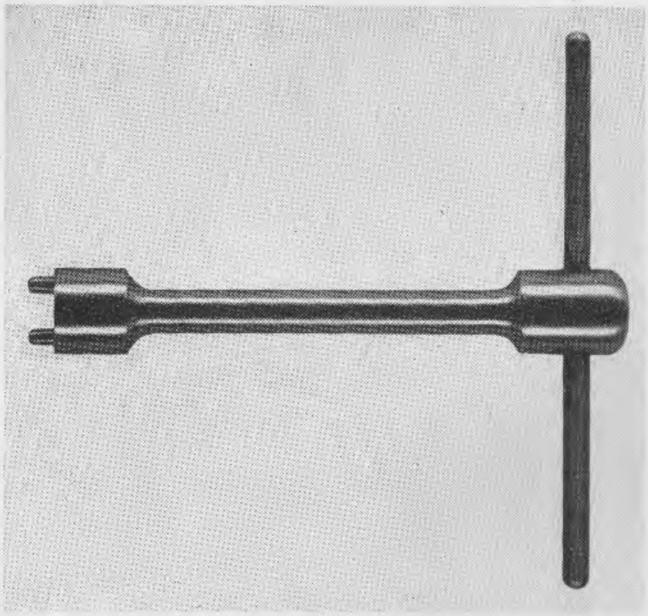
Spring Rear Shackle Bushing Tool (Threaded Shackle)



Tool No. S. T. 5048—Models 120-120B-120C-115C

When it is necessary to remove and replace the rear shackle bushing from the rear spring, it must be pulled out with this tool. The puller screw of this tool has to be made of special steel and equipped with a ball bearing thrust washer to withstand the strain necessary to remove and install the rear shackle. The forcing screw is amply large for the heavy pull required. The easy removal of the bushing is assured by having a ball thrust bearing under the forcing nut. The spacer sleeve is used in removing the bushing.

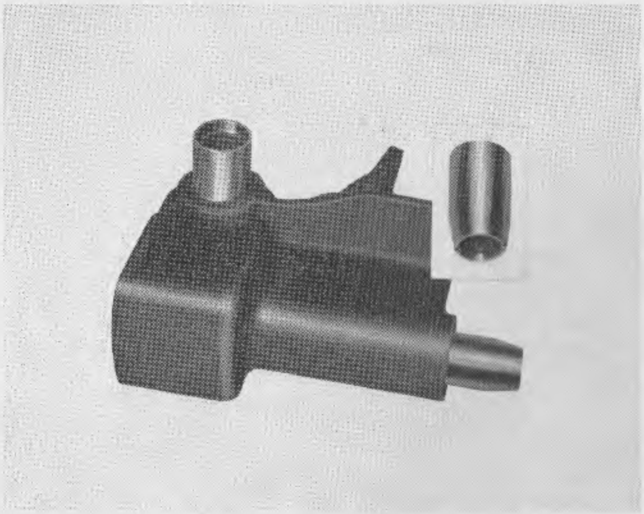
Horn Button Contact Screw Wrench



Tool No. S. T. 853—Model 900

In order to remove horn button contact screw on the 900 model it is necessary to remove the lower gears on steering post and slide tube assembly upward. Remove the horn button retainer and then use this special wrench to remove contact screw.

Steering Gear Cross Shaft Sleeve



Tool No. S. T. 988—Models 1500-1508-1603-8
Tool No. S. T. 5032—Models 120-120B-120C-115C-1600-1601-1700-1-3

This steering gear cross shaft sleeve was designed to cover the spline on the shaft. It is used in removing and replacing this shaft and prevents the spline from destroying the special oil seal in the steering housing. This shaft, if you do not use this special tool, will cut a spline in this retainer and cause an oil leak around the shaft.

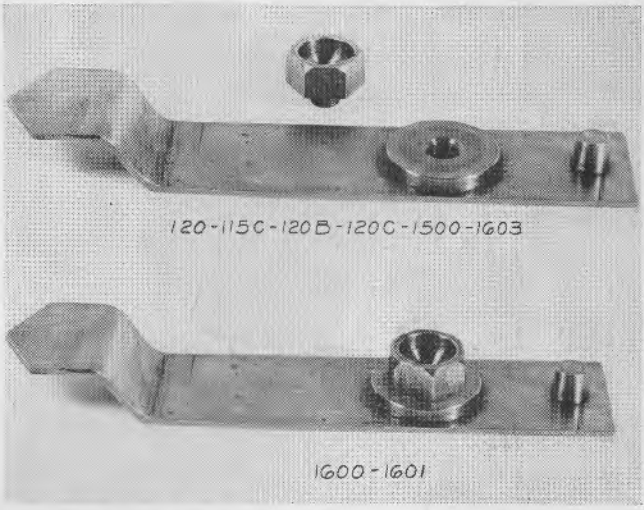
Steering Gear Cross Shaft Adjusting Lock Nut Wrench

Tool No. S. T. 977—Models 1500-1507-1603-1607-1708

This operation is rather difficult unless this special wrench is used to loosen cross shaft adjusting nut. A thin wrench is necessary to make this adjustment. Simply loosen the lock nut and pull the special lock washer back far enough to clear the lugs from the housing boss, use a screw driver and tap the lock washer until a slight drag is felt on the steering wheel.

The quality of work, and time saved will prove a good investment.

Steering Crank Aligning Gauge



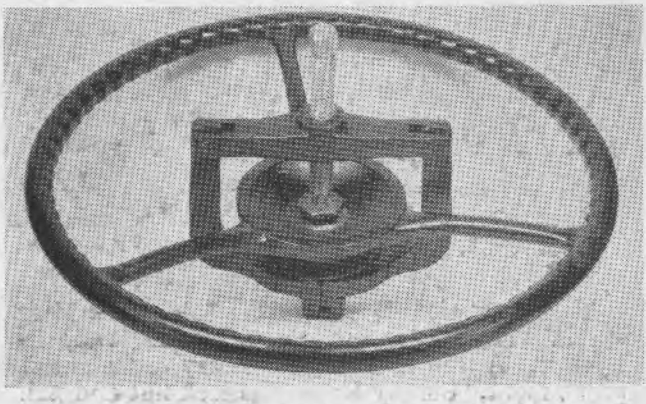
Tool No. S. T. 5105—Models 120-120B-120C-115C-1500-1600-1601-1603-1700-1-3

The steering crank aligning gauge is now a combination tool and supersedes steering aligning tool S. T. 5055. The above picture shows how it operates on the Model 120-120B-120C-115C-1600-1601.

Place the gauge up under the front frame channel. The small pin fits into channel and the adapter nut fits over the steering crank bolt on 1600-1601-1700-1701-3 Models by removing the adapter nut, the same tool can be used on 115-120-1500-1603 Models as illustrated in above picture.

Adjust each steering cross tube so that the distance between the brake drum and the centering gauge is the same on both sides. If this does not give you a toe-in of 1/16″ to 1/8″, adjust both steering cross tubes the same amount, using S. T. 128 Gauge to check the toe-in.

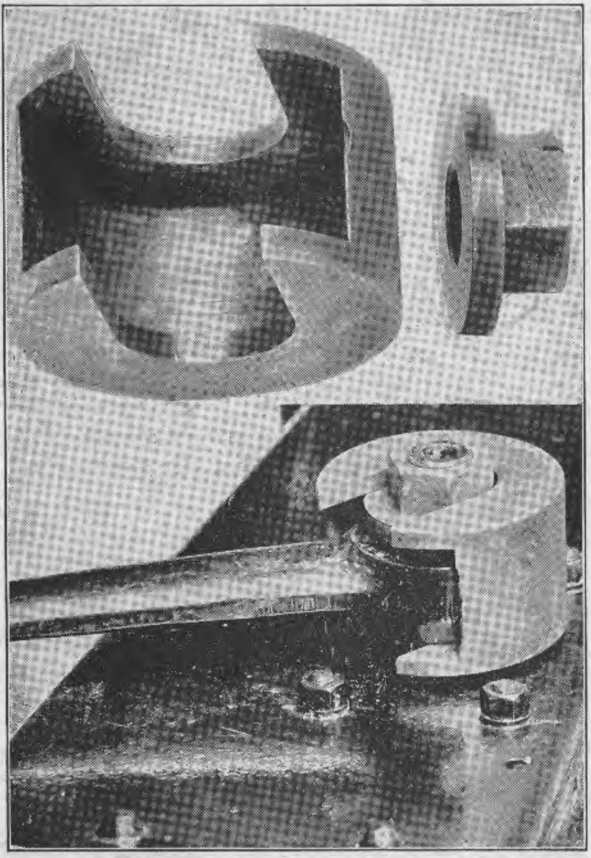
Steering Wheel Puller



Tool No. S. T. 938—Models Senior Eight-Twelve

With this equipment, the most stubborn wheel can be removed easily. This has a direct pull all around the steering wheel housing and protects it from being damaged, and has a leather washer which fits between the puller and the wheel. It is used in connection with S. T. 1437, which is designed to fit on top of the post and prevent the threads from being damaged.

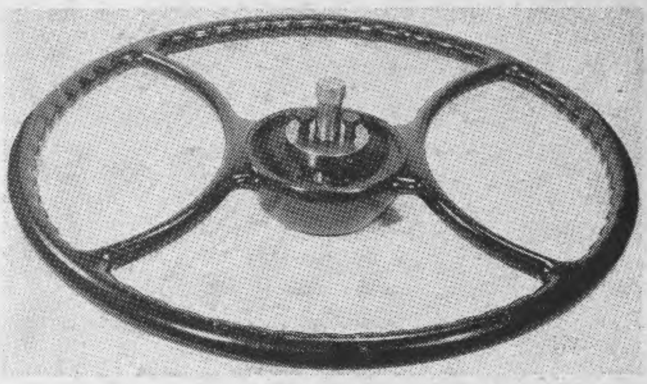
Steering Gear Lever Puller



Tool No. S. T. 135—Models Senior Eight-Twelve

This steering lever puller also includes a 12″ chrome-vanadium wrench.

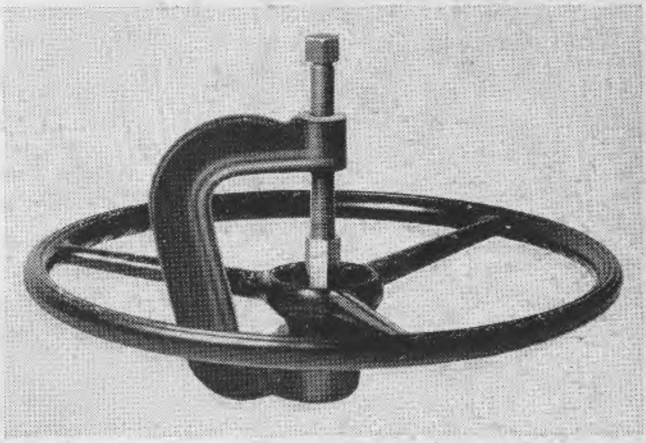
Steering Wheel Puller



Tool No. S. T. 5126—Models 1700-1-3

The new style steering wheel used with steering post shift is extremely difficult to remove without this puller.

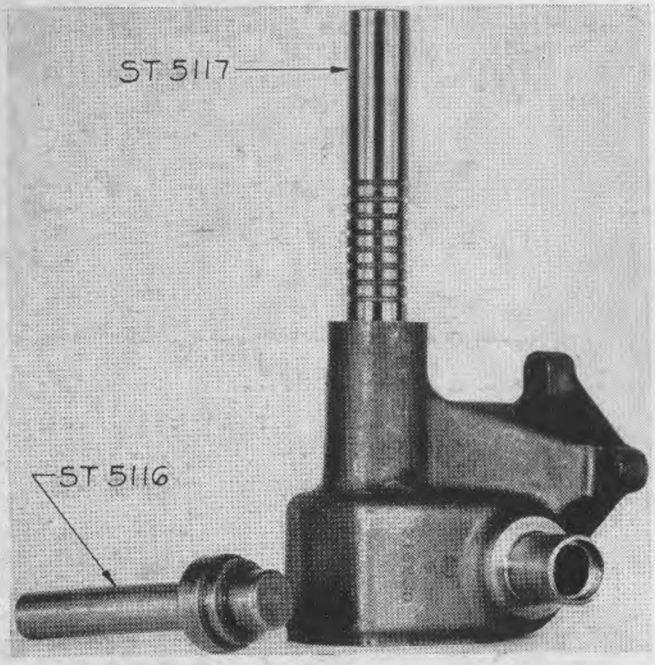
Steering Wheel Puller



Tool No. S. T. 5033—Models 120-120B-120C-115C-1600-1601

This puller is especially designed to remove the steering wheel from the post, without marring or injuring the hub of the wheel. The puller has a "U" shaped adapter that fits on the end of the steering wheel hub, and by turning down the screw the wheel is removed. Place the special screw cap on the upper end of the steering post before pulling the steering wheel.

Steering Gear Case Reconditioning Tools

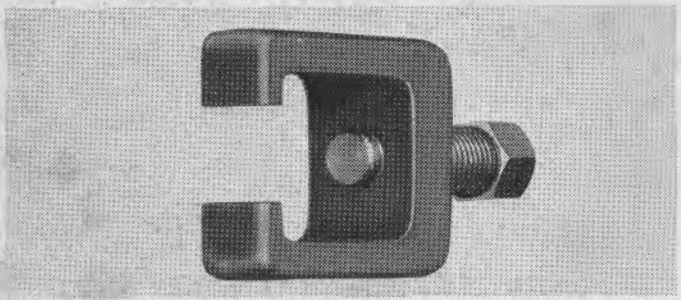


Tool No. S. T. 5116—Steering Gear Case Bushing Replacer
Tool No. S. T. 5117—Steering Gear Case Bushing Burnisher
Model 120-B-C-115C-1600-1-1700-1

The shaft end of the steering gear bushing driver is used for driving out old bushings and the large end is used for pressing the new bushings in place. The tool is made with three different dimensions so that when the new bushing is driven in place with S. T. 5116, both bushings are than 1/32 inch below case surface, to insure proper cross shaft clearance.

The picture shows tool S. T. 5117 steering gear bushing burnisher. Place the small end of this burnisher into the bushing and under an arbor press; use fast, even strokes, pushing the tool clear through. The pilot of the tool insures complete alignment, making the hole up to size without reaming.

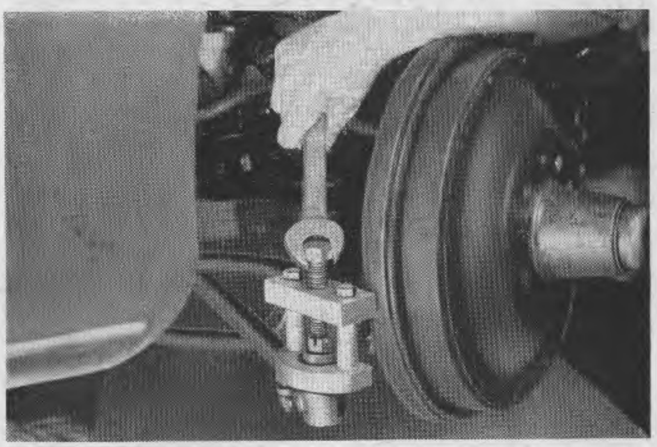
Steering Gear Lever Puller



Tool No. S. T. 5018—Models 120-120B-120C-115C-1500-7-1600-1-1700-1-3

This puller is so designed that you can remove the steering lever without removing the mud pan. This will save considerable time on this operation.

Steering Cross Tube Outer Ball Joint Puller or Shock Absorber Connecting Link Puller



Tool No. S. T. 790—Models 120-120B-120C-115C-1600-1601-1500-1603-1700-1701-3

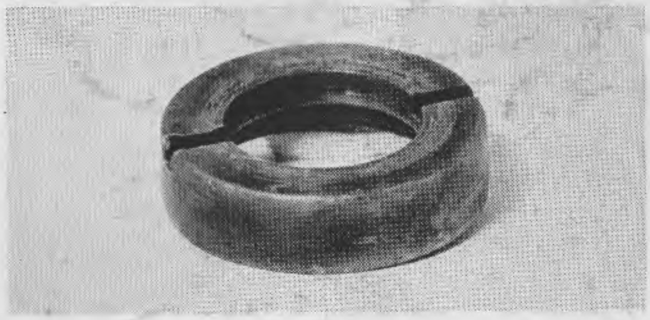
The illustration shows how the steering cross tube outer ball joint can be quickly removed.

To operate, first remove the hex nut, then place the puller underneath the steering arm with the bolt resting on the ball joint.

It is not necessary to apply excessive pressure. The tool should just be drawn up tight, and a few taps with hammer on the screw head will release the ball joints.

This tool can also be used on shock absorber connecting links on 826-840-901-903-1001-1006-1100-1108.

Steering Wheel Puller Adapter Nut



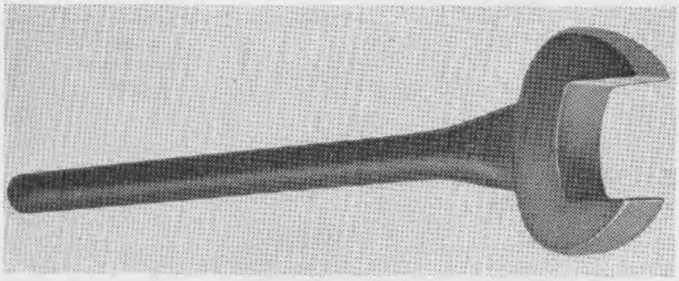
Tool No. S. T. 1437
To be Used with Wheel Puller S. T. 938

This special nut is screwed on to the upper end of the steering post and bottoms against the top of the post. Then our wheel puller is placed in position and tightened.

By giving the puller adjusting screw a sharp rap with a hammer, the same as you would in removing an axle shaft, you will find that the wheel can be removed without difficulty. This special adapter will allow a straight pull on the steering wheel and, in addition, will not expand the steering post, as is the case without this adapter.

STEERING

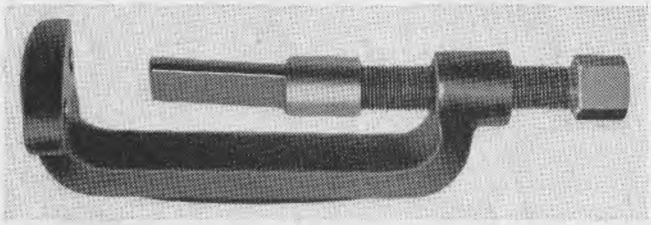
Steering Gear Lever Nut Wrench

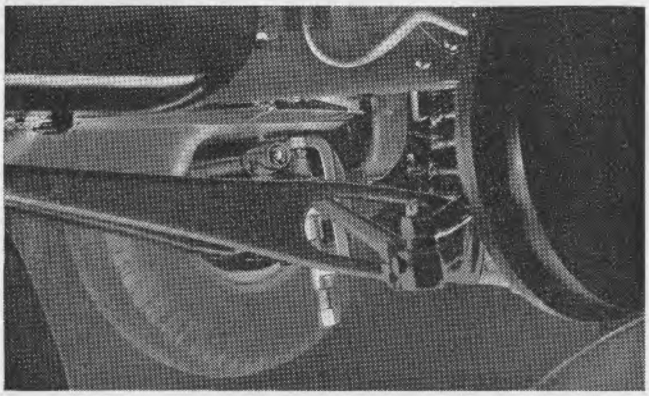


Tool No. S. T. 5022—Models 120-120B-120C-115C-1500-7-1600-1-1700-1-3

The steering lever nut wrench has a 1$\frac{7}{16}$″ opening and the handle is long enough to make it possible to tighten or loosen the nut without getting under the car.

Steering Cross Tube Intermediate Ball Joint Puller





Tool No. S. T. 5058—Models 120-120B-120C-115C-1500-1507-1600-1601-1700-1

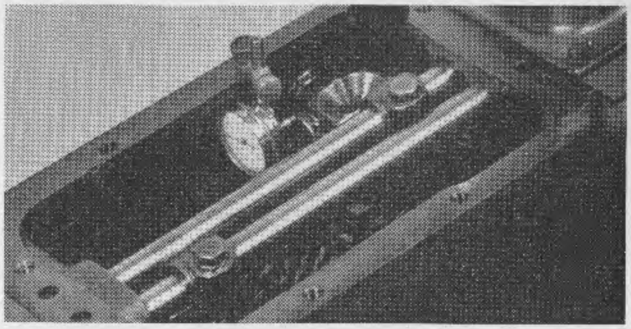
This heavy duty drop forged C-type puller was designed to remove one or both steering cross tube intermediate ball joints.

To operate, first remove the hex nuts. The tool should then be placed in position from underneath car, with the foot end resting on ball joint, and the pilot brought up snug against the bottom of the steering crank, between the two drag links.

It is not necessary to apply excessive pressure. The tool should just be drawn up tight, and a few taps with the hammer on the screw head will release the ball joints.

TRANSMISSION

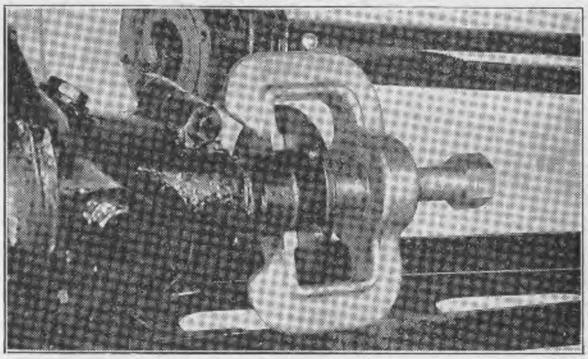
Transmission Synchro-Mesh Indicator



Tool No. S. T. 837—Models Senior Eight-Twelve

A tool for checking the brake shoe travel on synchro-mesh transmissions. For complete directions see Service Letter, Volume 7, No. 12.

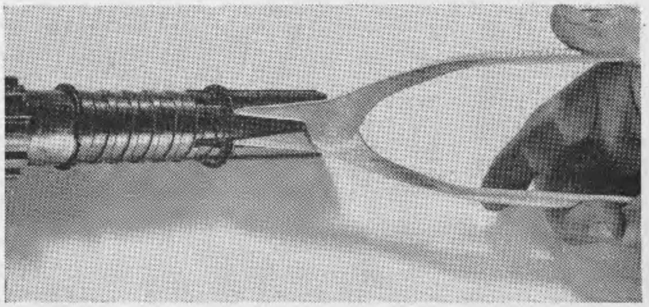
Universal Joint Flange Puller



Tool No. S. T. 124—All Models

With the use of this puller, the flange may be removed without disassembling large units. The screw works on a free nut principle which permits driving the head without damaging the threads.

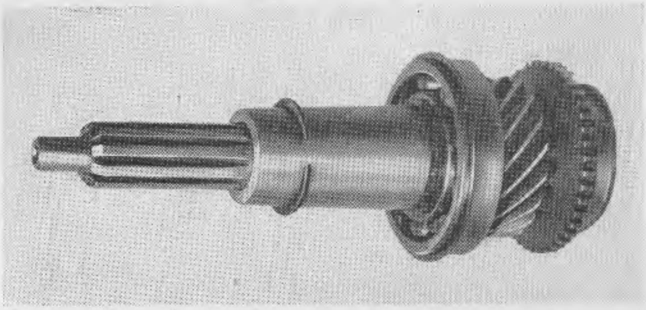
Transmission Econo-Drive Shaft Snap Ring Pliers



Tool No. S. T. 5132—Model 1700-1701-1703

This locking ring pliers is necessary for removing and replacing locking rings on overdrive driving shaft. They have square pointed jaws for expanding the lock wire so that it can be lifted clear of the driving shaft.

Transmission Clutch Shaft Bearing Lock Ring Installing Tool



Tool No. S. T. 5013—Models 120-120B-120C-115C-1600-1601-1700-1701

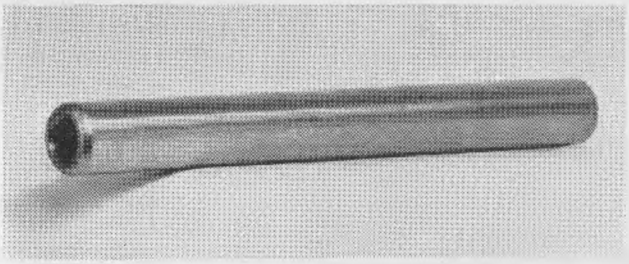
The clutch shaft bearing lock ring is very difficult to install without this tool.

(1) Place the lock ring on the small end of the taper sleeve.

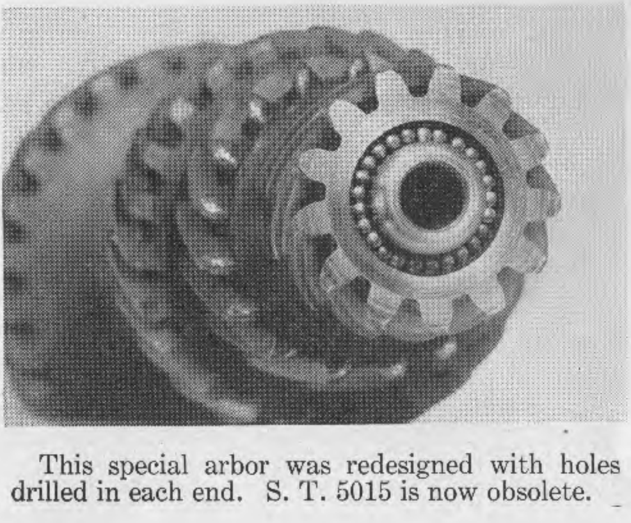
(2) Place the sleeve over the transmission shaft.

(3) Gradually slip the lock ring over the taper sleeve. This will expand the lock ring so that when it slips off the end it will drop into its proper place on the shaft.

Transmission Countershaft Roller Bearing Assembling Bar



Tool No. S. T. 5043—Models 120-120B-120C-115C-1600-1601-1700-1701

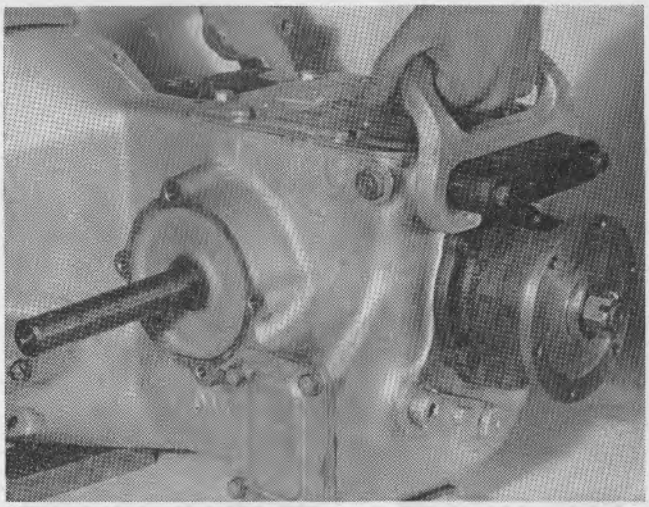


This special arbor was redesigned with holes drilled in each end. S. T. 5015 is now obsolete.

When you remove the cluster gear shaft from the transmission case, drive the regular standard countershaft out through the rear, using S. T. 5043 Roller Bearing Assembly Bar, and let the cluster gear lie in the bottom of the case. The assembly bar is left in the cluster gear to prevent the roller bearings from falling out.

When replacing the countershaft gears, lift the cluster gear in place, then place a screw driver through each end of the transmission case into the holes in the end of the S. T. 5043 Assembling Bar, and line up the shaft. Hold in this position, remove one of the screw drivers and insert the countershaft, holding the other end of the S. T. 5043 Assembling Bar in line with the hole in the other end of the case. Then drive in the countershaft.

Transmission Lifter

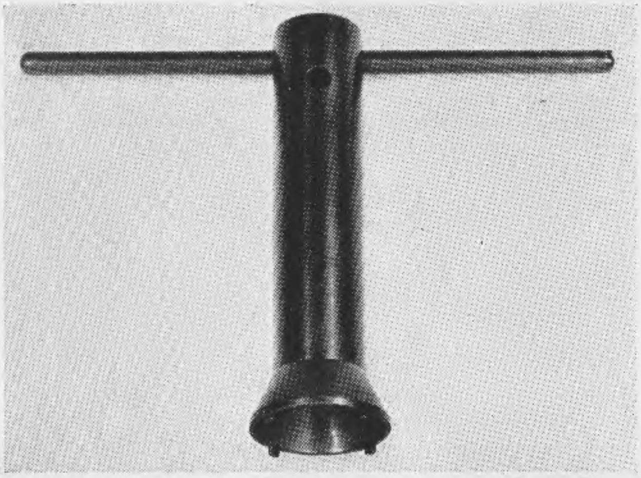


Tool No. S. T. 817—Models Senior Eight-Twelve

A transmission lifter S. T. 817 has been designed to facilitate the handling of transmissions on the Ninth Series car. This assembly projects under the front seat and it is difficult to handle without this device.

TRANSMISSION

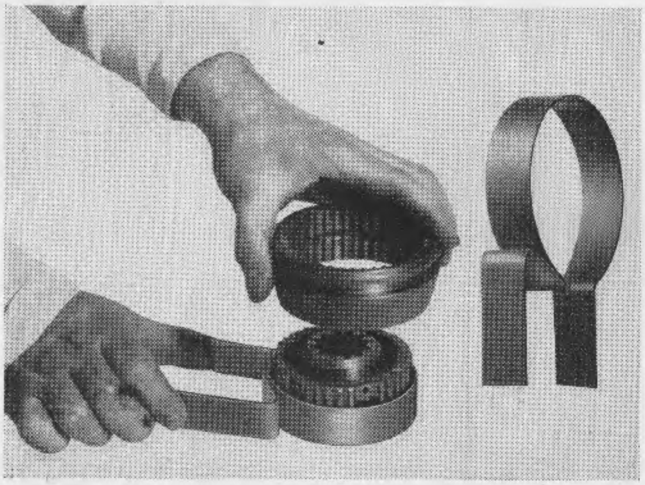
Transmission Clutch Shaft Bearing Nut Wrench



Tool No. S. T. 914—Models Senior Eight-Twelve

Transmission clutch shaft bearing nut wrench, which has been designed to remove the clutch shaft to bearing nut when it is necessary to adjust the high speed synchronizer.

Transmission Second and Direct Speed Clutch Gear Ball Bearing Clamp

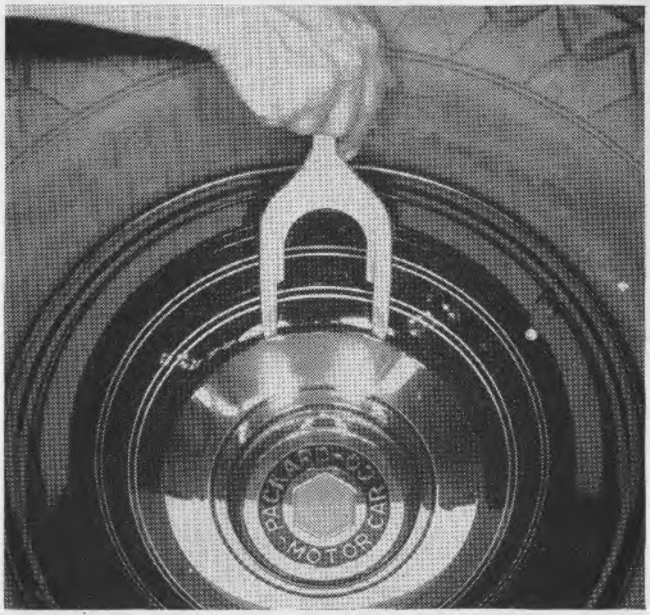


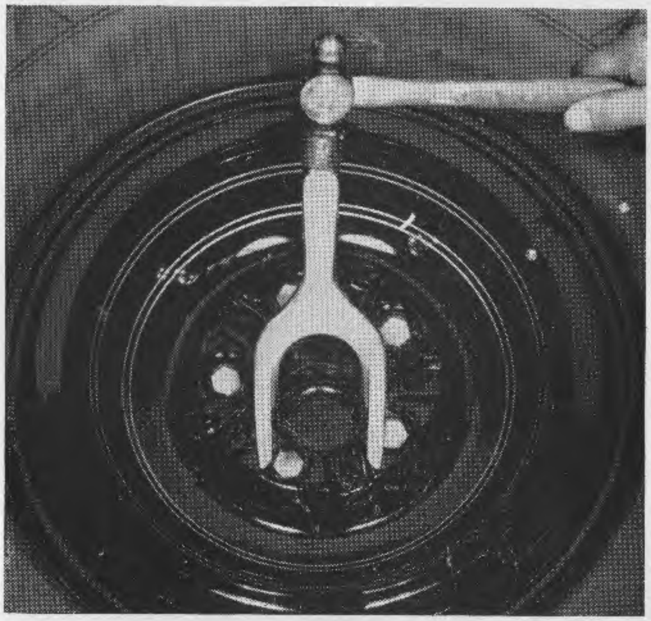
Tool No. S. T. 5014—Models 120-120B-120C-115C-1600-1601-1700-1-3

This tool will save much time when assembling ball bearing in the clutch gear. The ball bearing and springs are placed in position, then the clamp is placed over the clutch gear holding the ball and springs in place so that the ring gear will slide over the clutch gear.

WHEELS

Wheel Hub Cap Puller



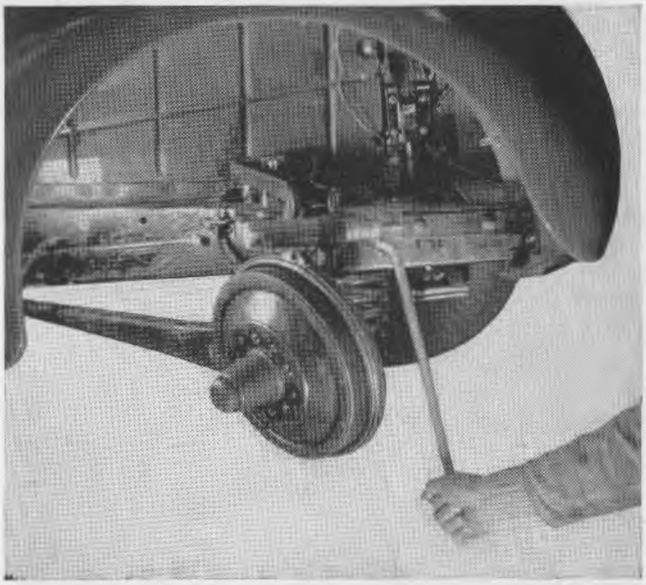


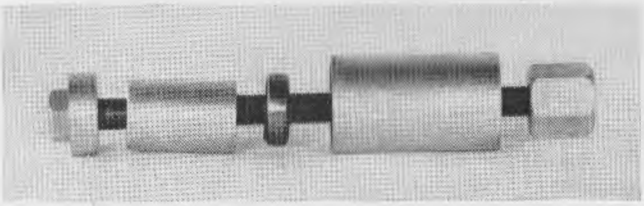
Tool No. S. T. 976—Models 120-120B-120C-115C-1600-1601-1500-1507-1603-8-1700-8

A great time saver. Removes and replaces hub cap shell cover and hub cap quickly and without damage. Several are needed in every Service Department. Check up and see how many you need.

Place the tool between the cover and wheel or hub cap and hub, and tap the top end of the tool with a hammer as illustrated in the above picture. It only takes about one minute to remove both.

Wheel Front Support Upper Bushing Removing and Replacing Tool





Tool No. S. T. 5049—Models 120-120B-120C-115C-1500-1507-1600-1603-1708

Following is the method for using the tool for this purpose:

(1) Remove the upper steering support arm bolt.
(2) Place the large cup on the shaft and through the support bushing.
(3) Place the No. 6 adapter against the support bushing.
(4) Place the small cap against the adapter.
(5) Place the ball thrust bearing against the small cup and the large nut against the thrust bearing.
(6) Tighten, and the bushing will be forced into the large cup of the puller.
(7) Reversing this operation will install the new bushing in place.

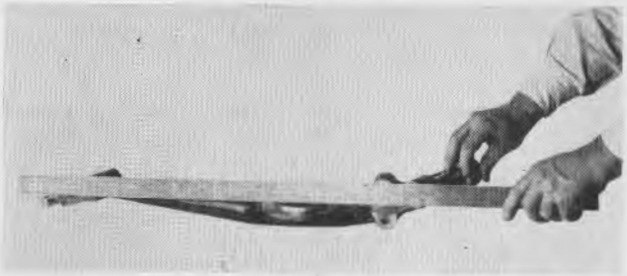
Do not attempt to remove this bushing with the old small nut sent out with this puller, as this will crack the thrust bearing.

Wheel Support Arm Inner Pin Bushing Sleeve

Tool No. S. T. 5099—Models 120-120B-120C-115C-1500-1600-1601-1700-1701-1703
Tool No. S. T. 2003—Model Twelve

This sleeve is to be placed over the inner pin bushing to prevent it from collapsing while the bushing is being pressed into the support arm.

Wheel Front Support Arm Inner Pin Bushing Aligner

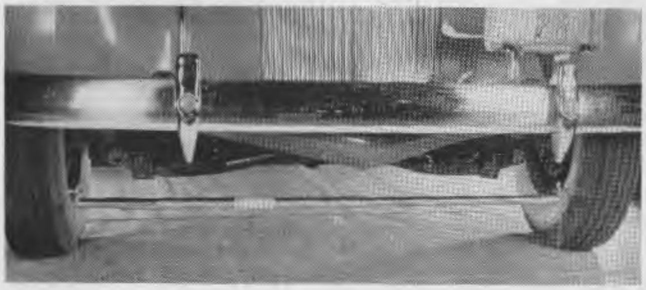


Tool No. S. T. 987—Model Twelve
Tool No. S. T. 5102—Models 1600-1601-1700-1701-1703
Tool No. S. T. 5030—Models 120-120B-120C-115C-1500-1603

This gauge is very essential for maintaining alignment when installing support arm pin bushing in the Safe-T-fleX front wheel suspension. This alignment must be maintained whether old or new bushing is being installed, as it controls wheel camber.

Place the gauge in the lower support arm directly under the steering knuckle. Place the inner pin bushing (this is the one located in the center of the frame) in the upper end arm. Then with a straight edge place one end on the flat part of the gauge and the other end on the flat part of the upper pin bushing. This insures correct alignment before pressing the upper pin bushing into the support arm. Use arbor press for pressing the bushing in place.

Wheel Toe-In Gauge



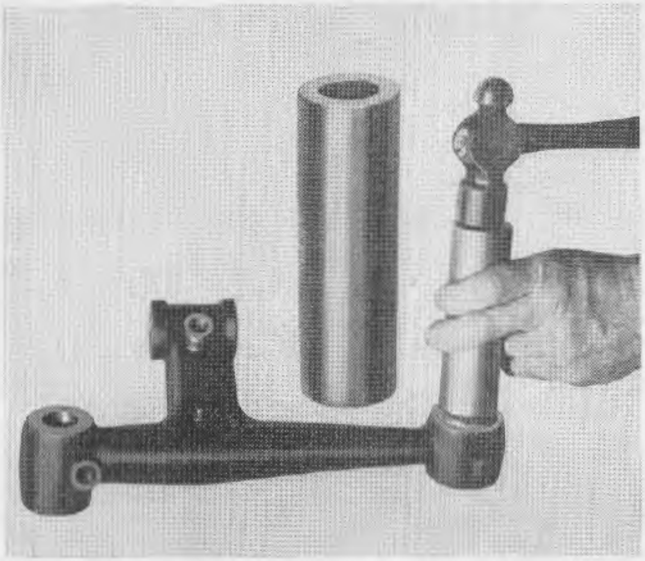
Tool No. S. T. 128—All Models

Pull car forward to obtain normal straight ahead position of the front wheels.

Place gauge between wheels at the front with ends of gauge bearing against the side wall of the tires and both chains barely touching the floor. Set scale so pointer registers at zero, then move car forward until gauge is brought into a position back of the front wheel with both chains barely touching the floor. The pointer will now register the amount of toe-in.

WHEELS

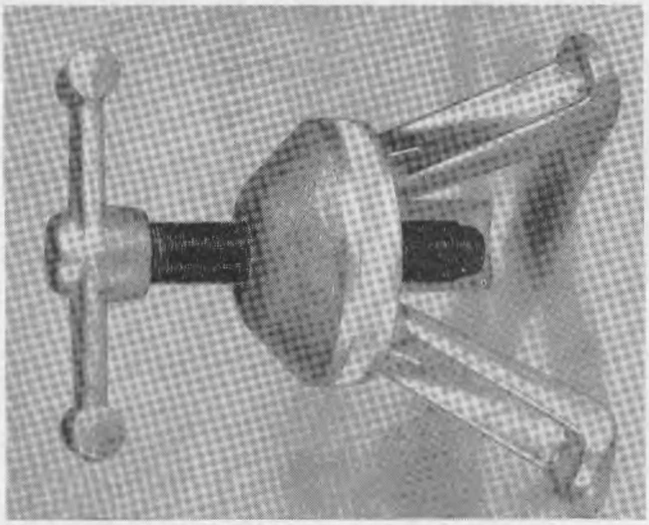
Wheel Front Support Upper Bushing Removing and Replacing Tool



Tool No. S. T. 5042—Models 120-120B-120C-1600-1601

A very handy driver for removing and replacing the wheel front support upper bushing, without damaging or distorting it. The tool is placed on the bushing and it is driven in and out with arbor press. You will find this operation very simple with the proper tool.

Wheel Hub Puller—Universal



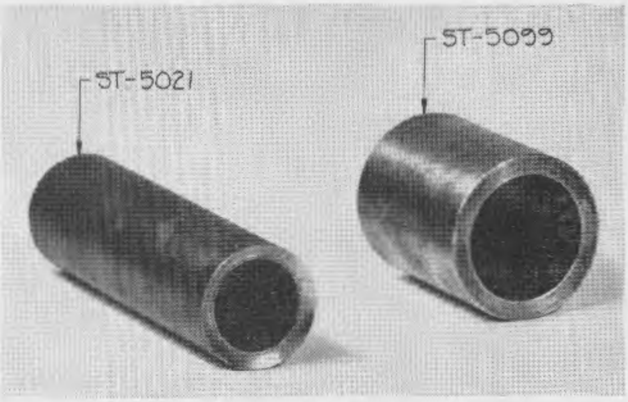
Tool No. S. T. 5074—All Models

The 120-B rear wheel cannot be removed with the old type Universal Puller.

There is nothing to take apart, nothing to assemble, simply set the arms to the wheel hub screw holes and securely fasten with wheel screws.

A few hammer blows on the drive handle will pull the tightest wheel. The most practical tool in the shop for removing any type wheel.

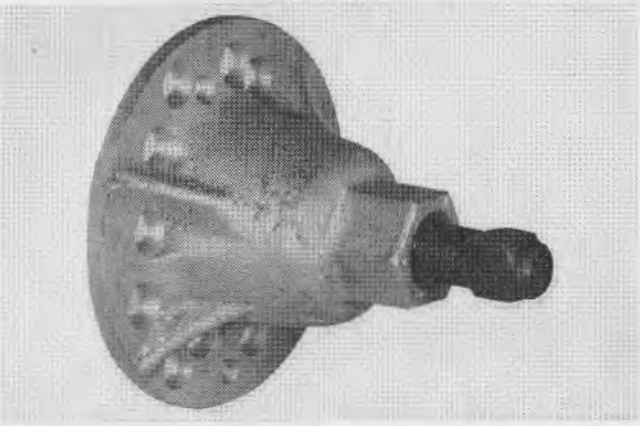
Wheel Support Arm Inner Pin Bushing Removing and Replacing Tool



Tool No. S. T. 5021—Models 120-120B-120C-115C-1500-1600-1601-1700-1701-1703
Tool No. S. T. 989—Model Twelve

This tool is used as a drift for installing the support arm inner pin bushing. It is very essential to maintain the correct alignment when installing support arm pin bushings in the Safe-T-fleX front wheel suspension. Place the bushing in the proper position with a straight edge resting square on the gauge (see illustration S. T. 5030), the other end on the bushing. This insures correct alignment, use arbor press for pressing the pin bushing in place. This bushing must be in position before assembling Safe-T-fleX front wheel suspension to the frame. If the correct angle is not maintained the camber angle is not correct.

Wheel Hub Puller

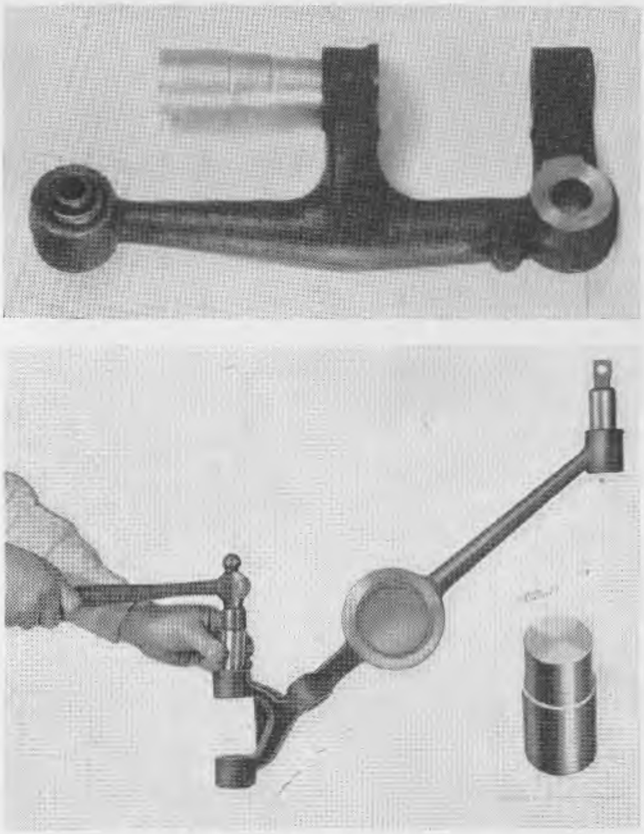


Tool No. S. T. 5073—Models 120-120B-120C-115C-1500-1507-1600-1601-1603-1607-1700-8

Here is a flange type puller for all rear brake threadless hub drums. This type of puller is fastened to the wheel hub screw holes, and is securely fastened with wheel screws.

The puller screw is drawn up tightly against axle shaft, which is generally sufficient to pull the drum. In exceptional cases the head of the screw may be struck with a hammer to break it loose.

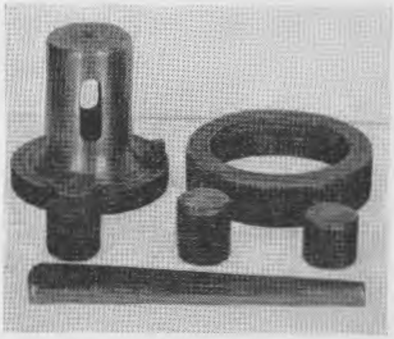
Wheel Front Support Arm and Outer Needle Bearing Bushing Removing and Replacing Tool



Tool No. S. T. 986—Model Twelve
Tool No. S. T. 5031—Models 120-120B-120C-115C-1500

This tool is used as a drift for removing and installing roller bearing bushings, drive in place with a soft hammer to avoid splintering head of drift.

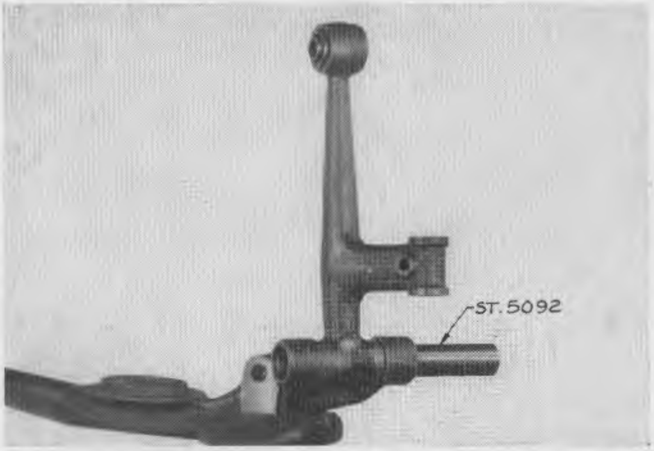
Wheel Puller—Heavy Duty



(K & G Type)
Tool No. S. T. 955—All Models (Puller only)

A real heavy duty wheel puller that will pull the toughest wheel. All parts are forgings and extremely rugged. Pulling is done by the wedge principle which does not transmit shock to the wheel bearing when struck with a hammer.

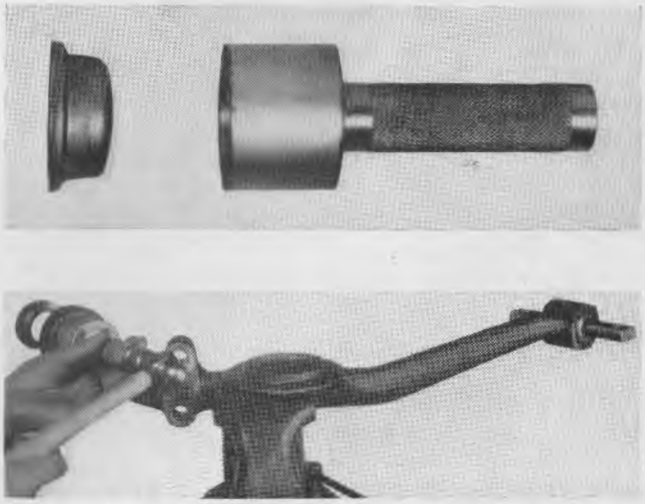
Wheel Support Arm Outer Pin Pilot



Tool No. S. T. 5092—Models 115C-120's-1500

First place S. T. 5092 in one side of the support arm to locate support lower pin. Then use S. T. 5090 roller holder in the other side to insert the rollers. After the rollers have been inserted in one side remove S. T. 5092 Pilot and insert the S. T. 5090 roller holder in the other side and insert the rollers.

Wheel Support Arm Outer Bearing Cover Driver



Tool No. S. T. 998—Models 1507-1607-1708

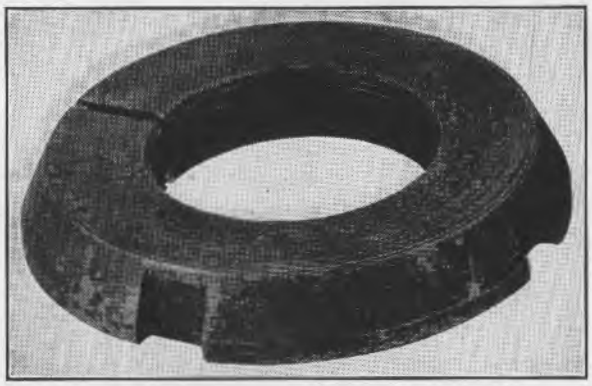
It is important and essential that the support arm bearing covers are properly installed.

When installed with this driver the cover is held square with the support arm.

The large end of the driver has a 5-degree taper so that it spreads the cap down into its seat.

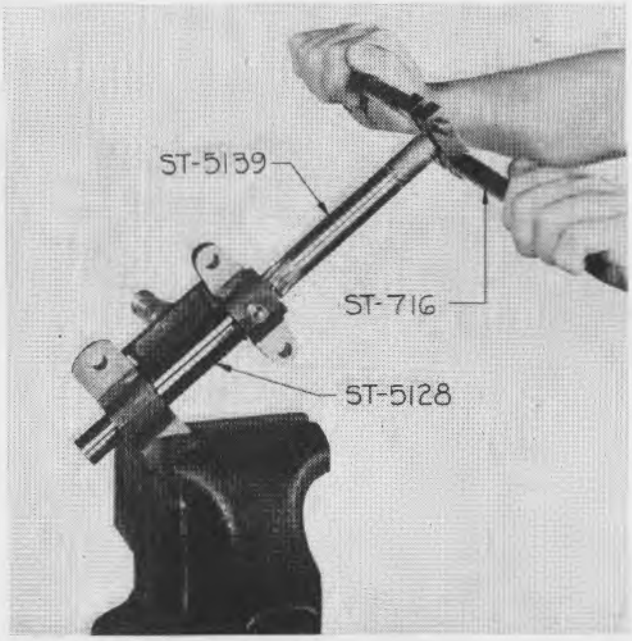
When bearing covers are removed for repair operation, the old cover must not be replaced, use a new cover.

Wheel Puller Adapter (K. & G.)



Tool No. S. T. 1371—$2\frac{1}{8}''$—Models 726-826-901-900-1001-4-1100-5-1200-5-1400-5
Tool No. S. T. 1253—$2\frac{13}{16}''$—Models 740-840-903-905-906
Tool No. S. T. 1431—$2\frac{1}{2}''$—Models 1005-6-1107-8-1206-8-1406-8
Tool No. S. T. 5040—Model 120

Wheel Steering Knuckle Reconditioning Tools



- **S. T. 5139—Line Reamer**
- **S. T. 5046—Burnisher 120-B-C, 115C, 1600-1, 1700-3**
- **S. T. 2006—Burnisher 1603-4**
- **S. T. 5128—Knuckle sleeve 120-B-C, 115, 1600-1, 1700-3**
- **S. T. 5039—Driver is used to press the steering knuckle bushings in or out of knuckle.**

In order to install the new style steel back steering knuckle bushing, it is absolutely essential that both bushings be line reamed and burnished. The pilot guides the reamer through both bushings before it starts to cut, insuring perfect alignment. The reamer is expansion type with spiral flutes to prevent chatter.

Note to mechanic: When reaming bushings, you must leave .002″ stock in bushing for burnishing.

Before burnishing place the steering knuckle spacer sleeve, S. T. 5128, inside of the steering knuckle as illustrated. This tool will prevent the steering knuckle from being sprung or thrown out of line when the burnisher is being pressed through with arbor press.

New Pivoted "Wee-Gee" Board

Tool No. S. T. 961

The purpose of the "Wee-Gee" board can be fully understood if you imagine the board as a section of the road, but mounted on roller bearings so as to record precisely as the wheel rolls over it any abrasive action against the tire.

The "Wee-Gee" Board requires only one man to operate. The readings are so obvious that the customer can be shown, and instantly visualize the slightest mis-alignment.

As a considerable portion of all car mileage is driven on right or left turns, it is extremely important that error on either side of straightaway be corrected. Such steering error causes very rapid tread wear, and the exact condition or cause cannot be determined without a precision instrument of this nature.

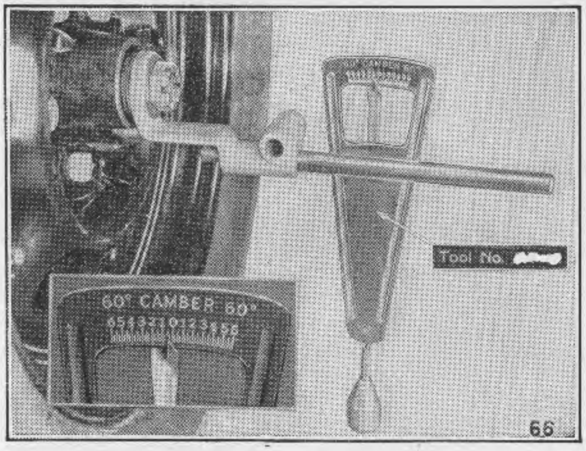
Readings are taken with the vehicle in its natural driving position and with full weight on the wheels.

Most vehicles require a check-up and service every 5,000 or 10,000 miles, and dealers who are properly equipped can develop a repeat business that will pay large dividends in cash and goodwill. It is not possible to guess at (steering geometry) or to determine errors by make-shift method. The slightest deviation must be recorded and corrected.

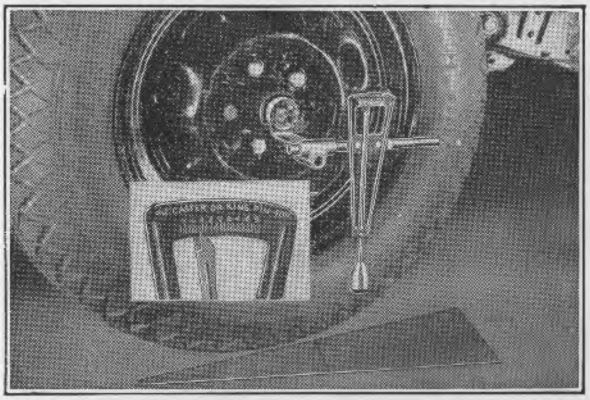
Checking King Pin Inclination

1. Install Gauge in spindle adapter parallel to wheel as illustrated. Adjust spindle adapter until gauge reads zero.
2. Turn wheels 20° to the left of straight ahead position and take reading on 40° scale. Remember to turn wheels past 20° and bring back to line up with angle gauge.
3. Turn wheels 20° to the left of straight ahead position and take reading on 40° scale.
4. Add these two readings together and result is King Pin Inclination. Repeat operation on opposite front wheel.

Note: Changing Camber or Caster directly affects front wheel "Toe-in."



Read 60° Scale for Camber



Read 40° Scale for King Pin Inclination

Example Front Reading 4½°
Rear Reading 4½°

King Pin Inclination 9°

Checking Camber

1. Wheels must be in straight ahead position.
2. Remove hub cap and spindle nut. Install universal spindle adapters as illustrated.
3. Install gauge in spindle adapter parallel to spindle and tighten spindle nut against adapter so that pendulum on gauge swings free.
4. Read Camber on 60° camber scale. Reading toward wheel is camber—away from wheel is reverse camber. Repeat operation on opposite front wheel.

Checking Caster

1. Install gauge as shown in Camber illustration and take readings from 40° scale.
2. Turn wheels forward 20° (use 20° angle plate). Wheels should be turned slightly past 20° then brought back to relieve friction between floor and tire.
3. Read forward angle and turn wheels back 20°. (Turn wheels slightly past and turn back to 20°).

How to Determine Caster or Reverse Caster Condition

4. If the front and rear readings are on the same side of zero, subtract the front from the rear. This result will be the Caster angle.
5. If the readings are on the same side of zero and the rear reading is less than the front reading, the result will be reverse Caster.
6. If one reading is on one side of zero and the indicator crosses zero on the other reading, add the amounts which will result in either Caster or reverse Caster.
7. If, when turning the wheels from the forward to the rear position, the movement of the indicator is toward the wheel, the condition is Caster, and if the movement of the indicator is away from the wheel, the condition is reverse Caster.

Examples

Indicator On Same Side Of Zero:

Rear reading	4°	Rear reading	2°
Front reading	2°	Front reading	4°
Caster Angle	2°	Reverse Caster	2°

Indicator On Both Sides Of Zero:

Front reading......1° away from wheel and zero
Rear reading.......1° toward wheel

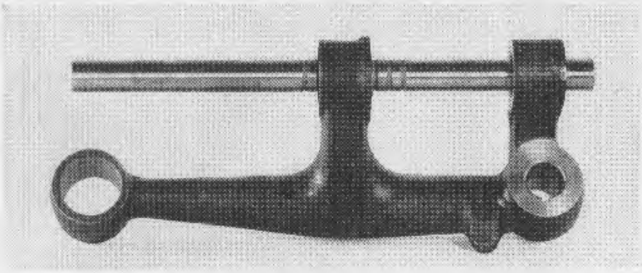
Caster Angle........2°

Front reading......1° toward wheel
Rear reading.......1° away from wheel and zero

Reverse Caster......2°

WHEELS

Wheel Support Bushing Burnisher

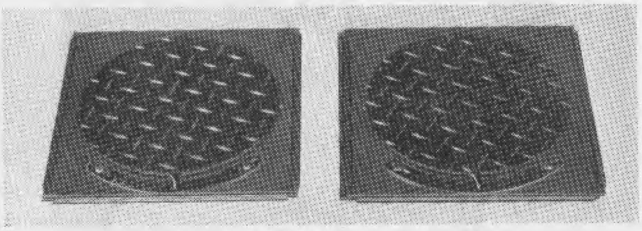


Tool No. S. T. 990—Models 1507-1607-1708

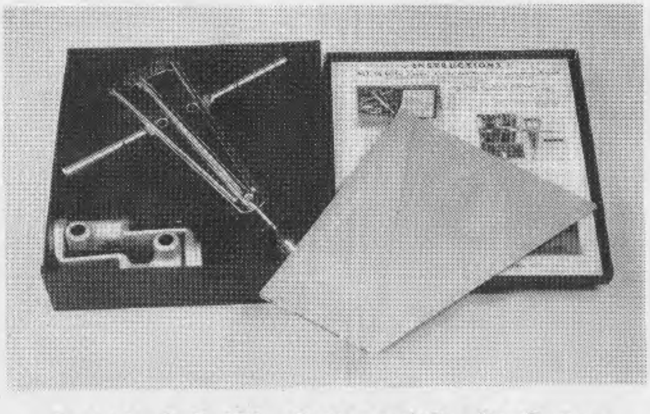
Here is a burnisher that must be used when installing new bushings into wheel support arm on 15th Series Twelve.

When pressing the bushing in or out of the support, use Tool S. T. 986—here is a tool that must be used for expanding and burnishing the new bushings in the support arm of the 15th and 16th Series Twelve. Place a bolt and nut between the inside of the wheel support.

Camber, Caster and King Pin Gauge



Tool No. S. T. 959—Turntables



Tool No. S. T. 873—Caster and Camber Gauge

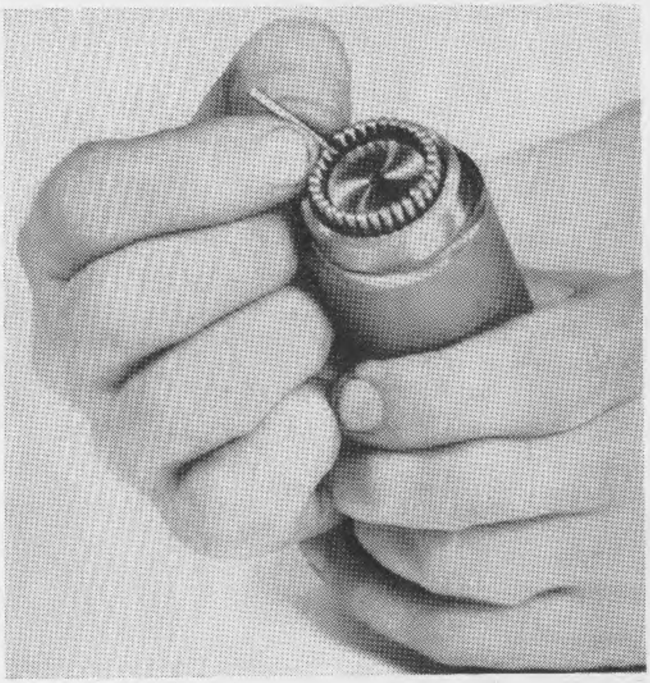
Accuracy, simplicity and low cost are all combined in this remarkable gauge. Accuracy of this gauge itself can easily be periodically checked by the mechanic by clamping one of the adapters in a vise and taking a reading on the same scale with first one arm and then the other. Readings will be the same if gauge is accurate.

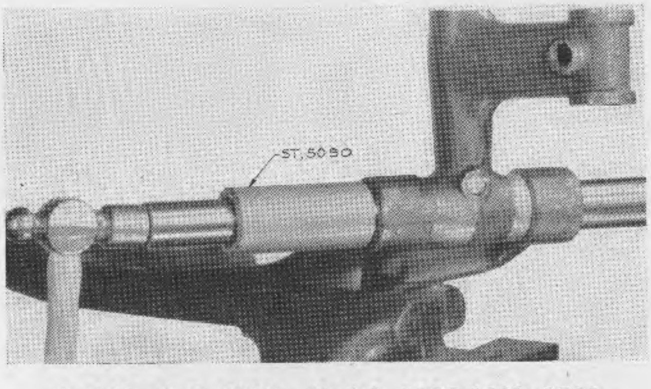
Before attempting to check front wheel alignment on any car, be sure car is on level floor or rack and tires evenly inflated to recommended pressure.

Special Note for Dealers Having S. T. 959 Turntables

If turning radius plates are used, they will give the degrees of turn in measuring Caster, King Pin Inclination, and Steering Geometry.

Wheel Support Arm Outer Bearing Roller Inserter





Tool No. S. T. 5090—Models 115C-120's-1500

These tools are essential for inserting bearing rollers into the front wheel support arm. The illustration shows the method of loading the tool. It will receive only the correct number rollers. The Six, 120, and 1500 should have 32 rollers.

The wheel front support arm outer bearing pin must first be put in place. Then use S. T. 5092 Support Arm Pin Pilot on one side to properly center the pin before inserting the roller bearings.

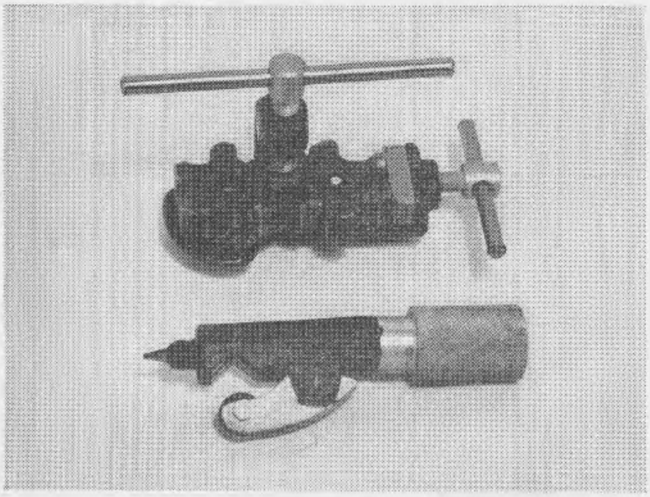
The S. T. 5090 tool must be loaded, then inserted in the other end of the support arm. A few taps on the plunger will permit the rollers to be forced into place around the bearing pin.

The Following Pages List

GENERAL SHOP EQUIPMENT

Adjustable Car Jack 61-76-77
Air Compressor 81
Air Strainer Cleaner 72
Auto-Display-Lite 82
Brake Testers 71
Bumper Bar End Bolt Cover Wrench 60
Caps 71
Car Lists 72-73
Chisel and Punch Set 60
Copper Tube Flaring Tool 60
Courtesy Coats 80
Cylinder Grinder and Hone 62-78
Differential Jack 61
Fender Bumping Iron 83
Headlight Testers 74
Hose Cutter 71
Ignition and Motor Analyzers 64-65-66-67-68-69
Jacks 61-76-77
Lubricant Dispensers and Background 84-85-86-87-88
Mechanic Tool Roll 73
Motor Flusher 70
Piston Pin Hole Grinder 70
Paint Spraying Outfit 77
Polishing Equipment 62
Portable Press and Stand 79
Radiator Test Tank Equipment 63
Rear Axle Flushers 75
Rear Axle Spring Clip Nut Wrench 60
Shock Absorber Ball Joint Wedge 79
Shop Overalls 80
Spark Plug Cleaners 75
Tire Gauge 61
Tote Pans 61
Valve Face Grinding Machine 78-82
Valve Spring Testers 60
Water Saver Automatic 79
Wheel Aligner 75
Wheel Balancer 76

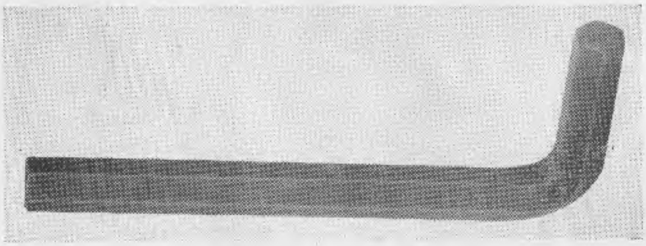
Copper Tube Cutting and Flaring Tool



Tool No. S. T. 768
S. T. 1384—Flaring Tool
S. T. 1385—Cut-Off Tool

The flaring tool and tube cutter will accommodate four different sizes of tubing: 3/16", 1/4", 5/16", or 3/8". This tool is designed to flare the end of the tube with a spinning action so that tubing will not crack or split at the flare.

Bumper Bar End Bolt Cover Wrench

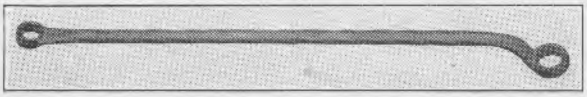


Tool No. S. T. 936

This is a special tool, designed to remove the bumper bar lower cover on the 1100 to 1105 model cars.

It has been heat treated and is tough enough to stand the strain of removing the cap after it has been in service for some time.

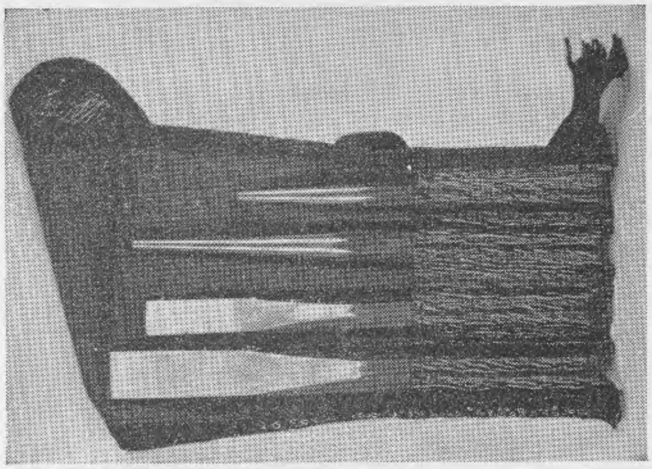
Rear and Front Axle Spring Clip Nut Wrench



Tool No. S. T. 786—All Models

Heavy duty double end box socket wrench 21" long with 15/16" and 3/4" openings with tremendous leverage. The handle is long enough to tighten rusty spring clip nuts. The long handle makes it possible to do the job without getting under the car.

Chisel and Punch Set

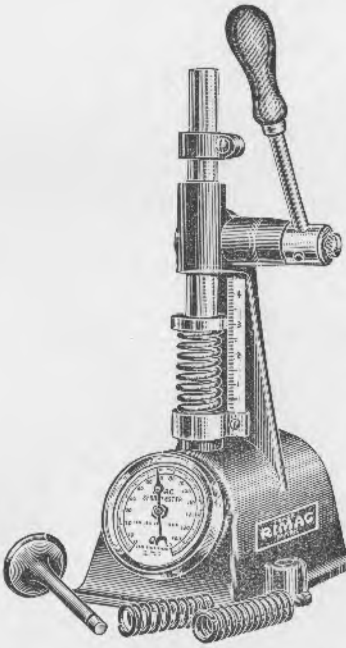


Tool No. S. T. 894

A handy size two (2) chisels, one (1) long Taper Punch, one (1) Center Punch. The chisel and punches are forged from toughest steel, heat treated, hardened and tempered and have passed a laboratory test for quality. The cutting edge is bevelled at correct angle to remain sharp under extreme abuse. The tools are useful for electrical and mechanical work.

Valve Spring Tester

Tool No. S. T. 948

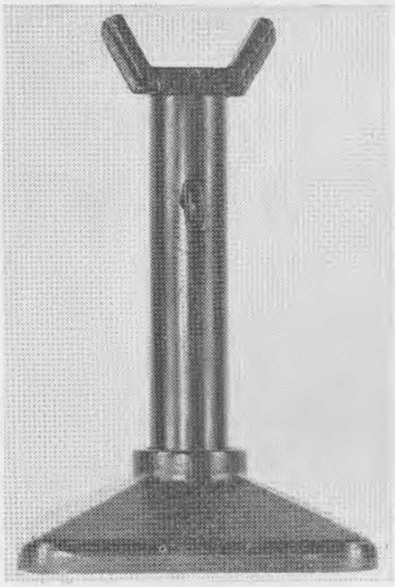


You really can't afford to be without this Valve Spring Tester. Every carbon and valve job should include an accurate check of the valve spring. Many of these lose their original tension after 20,000 to 30,000 miles of driving.

To test a valve spring — place the spring on center of weighing platform. Then loosen the locking clamp at top of the shaft. Compress spring to the reading in inches shown on the scale. This will automatically show you weight in pounds when compressed to desired length. Lock the clamp at top of the shaft and the rest of the valve springs for each job can now be tested without further setting.

See standard sizes and adjustment for proper tension of valve springs used on different models.

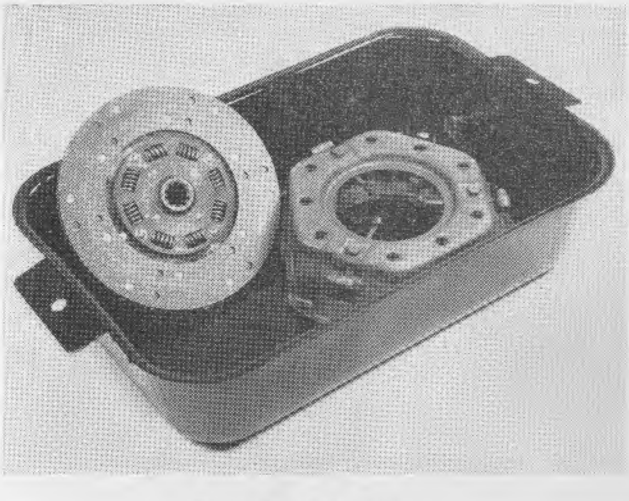
Adjustable Car Jack



Tool No. S. T. 155

These jacks are adjustable for different heights from 15″ to 24″. The saddle is malleable casting and shaped to give proper support to either the front or rear axle. The base is a heavy solid casting and forms a substantial support and strength.

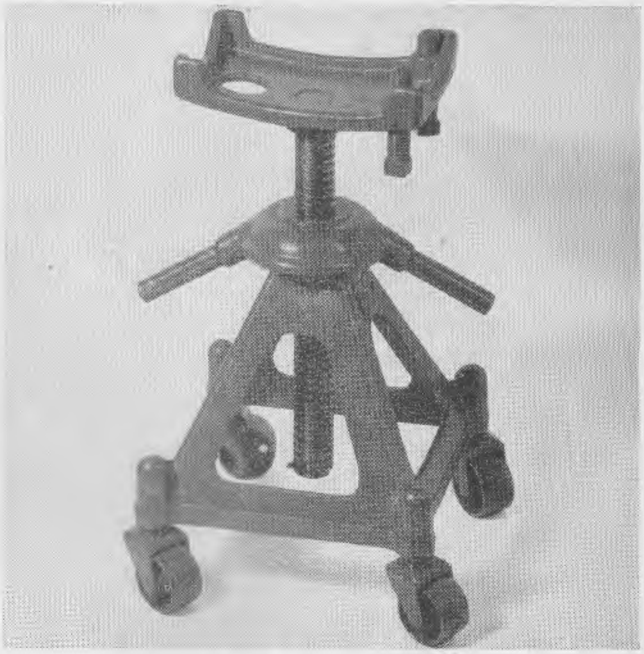
Tote Pan



Tool No. S. T. 982

This pressed steel tote pan is superior to other types we have seen. It is a heavy one-piece construction being stamped from 16-gauge steel. Inside measurement at the top is 22 x 14 x $5\frac{3}{4}$″—capacity five gallons. This type of tote pan has a hundred and one uses around a shop and may be used for keeping the individual parts of a car together and in good condition, for draining rear axle, etc.

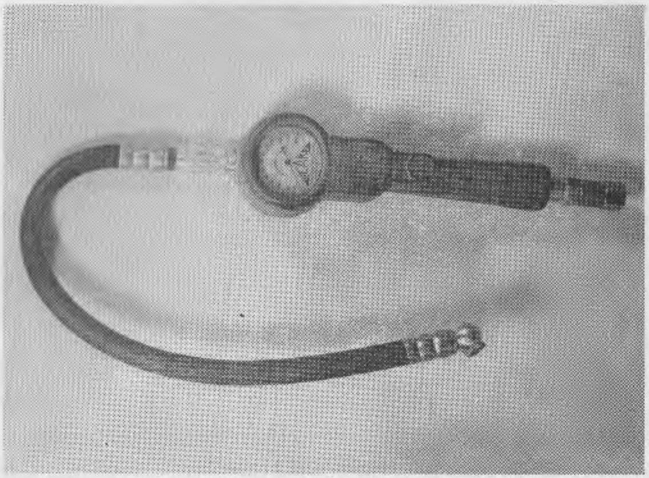
Jack



Tool No. S. T. 858

An adapter has been designed for use on the standard jack for holding the motor while the transmission is being removed. This applies to Tenth Series cars, where the rear motor supports are on the transmission case. It is, therefore, necessary to use a jack to hold the motor when the transmission is removed for any reason.

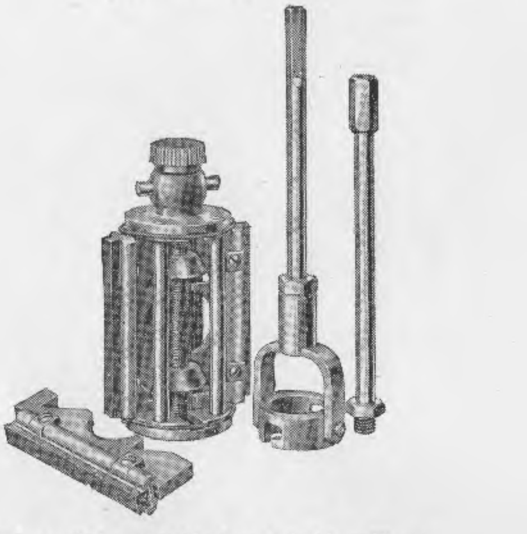
Tire Gauge



Tool No. S. T. 770

This is a very efficient gauge that can be attached to any air line, and is calibrated against a mercury column pressure gauge. This is the method employed where extreme accuracy is necessary. It indicates pressure from 5 to 60 pounds.

Cylinder Grinding



A Low Priced Cylinder Grinding Hone
Tool No. S. T. 970

Maximum Speed—This Self-lubricating Cylinder Grinder is the fastest and self-lubricating.

It is fast because it: removes metal at uniform high speed; continues to cut without frequent adjustments; is quickly and easily removed to check work; has no complicated adjustments; and minimizes cleanup.

Positive Accuracy—The highest degree of accuracy and quality has been built into this Self-lubricating Cylinder Grinder, assuring continuous, accurate work.

The Grinder is furnished with one set of standard stones and provides maximum cutting speed—mirror finish.

No Flying Dust—A revolutionary process, whereby the stones and buffing guides are impregnated with a dry lubricant, controls abrasive dust and saves time on the cleanup.

Easy to Operate—The Self-Lubricating Cylinder Grinder is light, easily adjusted, and operated by any ½ inch electric drill.

This hone, not using a vacuum system, care should be taken that the crankcase and the cylinder is thoroughly clean before assembling.

Dry Cylinder Grinder, packed in steel kit box, complete with adjustable drive shank, drive shank extension, 2 sets of stone carriers, one set of standard coarse stones and buffing guides, and one set of burnishing stones and buffing guides. Net Weight 8½ Lbs.

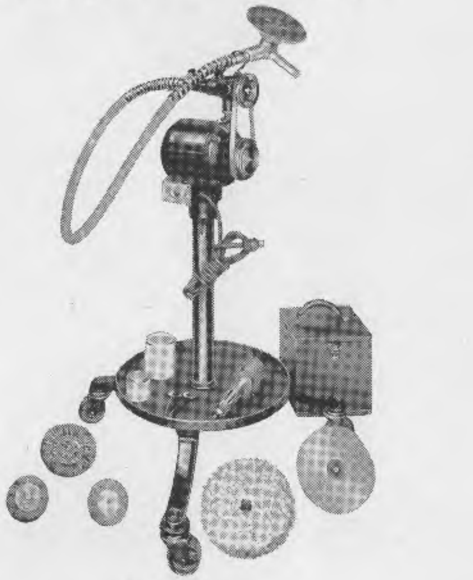
Extra large size Stone Carriers can be furnished as follows:

Type C—Stone Carriers—Range 4⅛" to 4 15/16"

Type D—Stone Carriers—Range 4 15/16" to 5⅝"
Replacement Stones—Standard Coarse Stones, per set, consisting of two stones and two buffing guides Burnishing Stones, per set, consisting of two stones and two buffing guides.

Extra Fine Stones, per set, consisting of two stones and two buffing guides.

For Polishing, Rubbing, Disc Sanding, Grinding and Wire Brushing



Model HC-5-2

For Polishing and Cleaning all Lacquered Metal Surfaces, also Waxing for High Lustre and Protection of Finish

Specifications

Motor—½ H. P. Timken Roller Bearing. Shafting—7/16" x 6". Ball Bearing Right Angle Head—one to one. Multiple Speed Timken Roller Bearing Countershaft. Speeds—875, 1300, 2,350, 3,500. 7" Disc Sander Pad with Extra Discs. 3" Sanding Drum with Extra Sleeves. Ball Bearing Spindle. 4" Grinding Wheel. 4" Wire Brush. 6" Wire Brush. 8" Felt Rubbing Pad. 8" Sheepswool Polishing Disc.

The shop doing both auto body repair and repaint work should use a type of equipment with variable speed arrangement, so that the most efficient speed can be obtained for the various operations to be performed.

This equipment is built for production shop service, and therefore includes the latest developments to make these tools stand up under the most severe service.

Timken Roller Bearings are used in the motors and countershafts to take up thrust load to insure long life and cool running parts. Ball bearing construction is used on spindles and right angle heads. Flexible shaft is a development of many years of test under varying conditions which have given us a shaft which will stand up under the speed and load required of it.

The machine you buy should include these features to insure you of receiving the service you should expect.

As a rubbing tool you will find it exceptionally efficient—powerful, long-lived and serviceable. It permits the operator to produce uniformly high quality work. Besides, he accomplishes more in a shorter space of time, and with far less energy expended.

Scientific Radiator Service

Radiator Test Tank Equipment

Tool No. S. T. 898

Equipment which will help sell radiator service is now available. Periodical care of the radiator and the cooling system is just as important as periodical lubrication.

It is easy enough to talk about the necessity of a new radiator core, or the flushing out of the cooling system, but it is much more convincing and, therefore, better selling to let the customer sell himself on the necessity of such work. The equipment which we present has been designed to not only test the efficiency of the radiator core, but at the same time to show the customer the need for attention or replacement.

The cost of the installation illustrated can very quickly be offset and the making and installation of the test meter is very simple.

The installation is as follows:

Procure a 52 gallon tank (a standard steel oil drum will serve this purpose). Install this on a well-built stand so that the bottom of the drum is about six inches above the top of the radiator filler cap on the car. Paint the tank and stand white and letter the tank in blue, as indicated.

Use 1½″ pipe fittings. Braze six inch length of 1½″ diameter steel tubing through the outlet pipe nipple for attaching hose. An adapter is used for the 900 radiator and a "Y" fitting for the Twin.

If the installation is made in a dark space, we suggest running a light to illuminate the dial, or one bulb with a suitable reflector will illuminate the whole device.

Instructions for operating the radiator test meter:

(1) Drain cooling system.
(2) Disconnect upper and lower radiator hose.
(3) Plug bottom of overflow tube.
(4) Attach hose from meter to upper radiator fitting.
(5) Fill test tank with water. (This tank should be kept full of water to prevent delaying customers.)
(6) Open valve wide and hold until radiator overflows the filler neck.
(7) Close valve until water just maintains its level with the top of the filler neck.

The hand on the dial will show the gravity flow per minute in gallons.

Consult chart, which should be displayed.

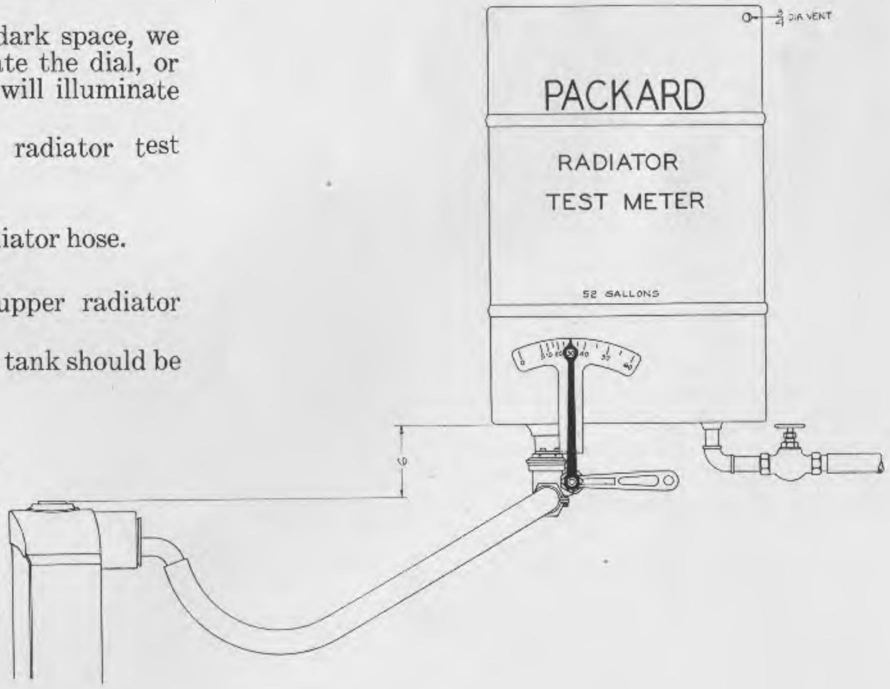
NOTE: To avoid variations, the tank should be kept filled and not more than five gallons will be used in making a check.

Testing of the core should be done in front of the customer. As soon as the results are obtained you can easily convince him of the desirability of having the work you suggest promptly taken care of.

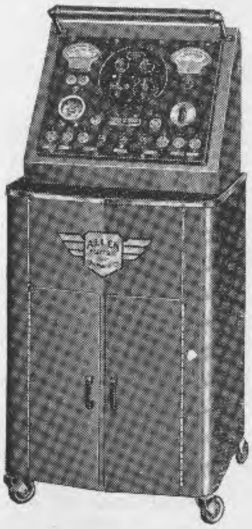
Instructions for Checking Dial Pointer:

1. Secure a 10-gallon container with an open top.
2. Place container on floor near the bottom of the tank within easy reach of the hose.
3. Fill the tank with water.
4. Open valve until pointer rests on "30," and check with a stop watch.
5. The time required should be 20 seconds. If it varies more or less, change position of pointer on the shaft until it takes exactly 20 seconds to fill the 10-gallon receptacle with the pointer resting at "30" on the dial.
6. Lock and pin pointer in position. (NOTE—If flow checks O. K. at "30," it will not be necessary to check other calibrations.)

See Service Letter, Vol. 6, No. 21.



Motor Tuner



Model E-426
Accurate—Attractive—Simplified
Easily Used and Understood

Only six testing leads and one hose are required for all tests. Polarized plugs prevent wrong connections being made, and the selector switch places the meters and spark gap into the testing circuit as required. Meter dials are marked with "Good" and "Bad" zones for coil, condenser, spark plug and cable tests. This method greatly simplifies understanding the readings obtained.

Tests

Battery—Under Load or Open Circuit.
Starter—Stall Torque or Free Running.
Distributor—Contact Angle, Breaker Points, Rotor and Cap.
Coil—Condition of Windings, Specifications not Required.
Condenser—Opens, Shorts, Leakage, Series Resistance and Capacity.
Spark Plugs—Leakage and Condition of Insulator with Plug Firing.
Ignition Cables—Leakage, Grounds and High Resistance.
Generator—Output and Condition.
Voltage and Current Regulator—Adjustment and Condition.
Current Relay—Adjustment and Condition.
Ammeter—Accuracy.
Lights and Wiring—Shorts, Grounds and High Resistance.
Fuel Gauges—Resistance of Units.
Horns—Tone Synchronization, Opens, Shorts and Grounds.
Radio Resistors—Resistance Directly in Ohms.
Fuel Pump—Vacuum and Pressure.
Vacuum—Engine, Fuel Line, Tank, and Windshield Wiper.
Voltage Drop—All Circuits and Units.
Horns—Relays.

Motor Tester

Model E-401
Each separate unit is removable from the panel
Attractive—Impressive—Convincing
— a remarkable machine which quickly and accurately shows car owners what the trouble is and where it is.

Adapting radio engineering principles to automobile testing with simplified meter dials calibrated "Good" and "Bad."

Tests

Battery—Under Load or Open Circuit.

Starter—Stall Torque or Free Running.

Compression—Comparison between Cylinders.

Distributor—Dwell, Points, Rotor, Cap.

Coil—Windings for Shorts, Opens, Grounds.

Condenser—Opens, Shorts, Leakage, Series Resistance and Capacity.

Plugs—Leakage and Insulator Condition.

Cables—Leakage, Grounds and Resistance.

Generator—Output and Condition.

Voltage and Current Regulator—Adjustment and condition.

Current Relay—Adjustment and Condition.

Ammeter—Accuracy.

Lights and Wiring—Shorts, Grounds and High Resistance.

Radio Resistors—Resistance Directly in Ohms.

Horns—Tone Equality and Wiring.

Voltage Drop—All Circuits and Units.

Fuel Pump—Vacuum and Pressure.

Vacuum—Engine, Fuel Line, Tank and Windshield Wiper.

Combustion Analyzer

Model G-30
A Super Salesman for Motor Tune-up Work

Combustion analysis is the quickest and most accurate way of convincing car owners of the need of a thorough motor tune-up.

The test can be made in from three to five minutes on any kind of straight gasoline or blends, and the percentage of waste is in this way determined.

Anything that affects the ability of an engine to efficiently burn its mixture affects its ability to produce power. An Allen Combustion Analyzer is a necessity in every well equipped service station.

FEATURES

(1) Analyzing unit removable for road testing.
(2) Meter rapidly responsive to gas changes.
(3) Extremely accurate readings both on lean and rich sides of scale.
(4) Large etched meter dial, 6x4½ inches. Three colors on silver background. D Arsonval moving coil movements. Zero adjustments.
(5) Registers both Air Fuel Ratio and percentage of Combustion Efficiency.
(6) Built in 0-30 inch vacuum gauge.
(7) Easy to operate. Only two adjustments.
(8) Analyzing cells and flash light batteries life extremely long. Easily changed when replacement is required. Analyzing cells guaranteed 8 months.
Life is considerably longer as when they become sluggish a treatment with Carbon Tetrachloride rejuvenates them.
(9) Analyzing mechanism enclosed in sheet steel case, which forms the back of the aluminum panel casting.
(10) Universal tail pipe sampling tube with 15 feet of rubber hose.
(11) Illuminated panel. Two 110 volt lamps with chrome shields. Bulbs not supplied.
(12) Splendid appearance. Stand finished bright red with chrome molding and rubber covered table. Swivel type rubber tired casters.

Syncrograph

Model E-136
Precision Instrument

The Allen Method of combining a specially designed Contact Angle Meter with a Neon Tube to check distributor action makes obsolete other procedures for testing distributors.

The Syncrograph, when equipped with portable stand is known as the Model E-136. Less stand, for bench mounting, is Model E-137 (see next page). Both models are equipped with pump and gauge for checking the action of vacuum controlled distributors.

FEATURES

(1) Inclined panel makes meters easy to read, and controls readily accessible.
(2) Contact Angle Meter calibrated for all distributors.
(3) Vibrationless Electric Tachometer.
(4) Neon Tube flashes easily discernible.
(5) Universal Chuck for driving all types of distributors.
(6) Test Selector Switch—Controls all tests.
(7) Variable speed, reversible motor—stable operation at all speeds.
(8) Built-in Charger—maintains voltage of test battery.
(9) Graduated 0-360 degree universal ring—for testing all distributors.
(10) Specifications for all distributors.
(11) Splendid appearance. Finished bright red, trimmed with chrome. Show case lighting fixture.
(12) Easy to understand instructions. Personal assistance by trained representative.

SHOP EQUIPMENT

Tune-Up Display Background

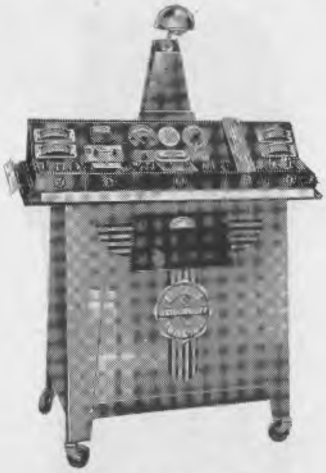
Showmanship in the tune-up department is important and productive. An attractive layout adds new customers, increases service sales, and proves your progressiveness. The background shown above, which is available to Owners of Allen Equipment at Allen's cost will add materially to the appearance of your service facilities.

Masonite reinforced with a wood frame makes the background sturdy and durable. It cannot warp or become easily damaged. The colors are washable blue and orange, and the 10″ cut-out silver letters can be ordered in any wording desired. Examples: "Smith's Super Service"—"Jones Motor Analysis." Specify wording when ordering.

The main section is 8′ high and 12′ long with hinge mounted 4′ long adjustable wings at each end. Over-all length is 20′. It is packed knocked down in two crates, the total shipping weight of which is 308 lbs. Installation is easy, requiring approximately 30 minutes. Complete instructions are furnished.

Net Price No. 60 Background $38.50 F. O. B. Kalamazoo. 10″ Silver Letters 20c each additional. Dealer shipments C. O. D.

Motor Analyzer



Model 1000

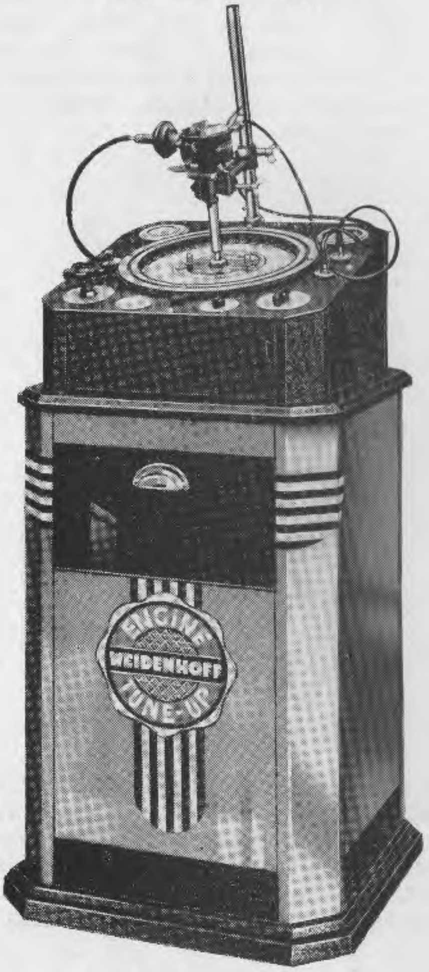
The complete motor analyzer includes five test units which may be purchased separately. They are mounted on a rugged easily moved stand, handsomely finished in blue with chrome trim.

Test

Storage battery, cables and connections
Starter motor and switches
Starter motor free cranking
Generator cold or hot
Generator output and condition
Headlight system voltage loss
Ignition system
Ignition coil cold or hot
Ignition coil high speed test
Ignition condenser
Ignition timing
Spark plugs and wiring
Spark plugs cables punctures
High tension wires
Radio antenna
Radio compression
Motor vacuum
Air cleaner
Exhaust back pressure
Fuel pump pressure
Fuel pump vacuum

The meters are easy to read as a thermometer or tire gauge. Confused wiring is eliminated and only one test unit is applied at one time. There is no guess-work. Simple tests save time, avoid misleading results and are much more convincing.

Distrib-U-Scope



(Model 857 Cabinet Type)
Tool No. S. T. 2014
Cabinet Mounting with Double Light Rotor
(Red and Blue)

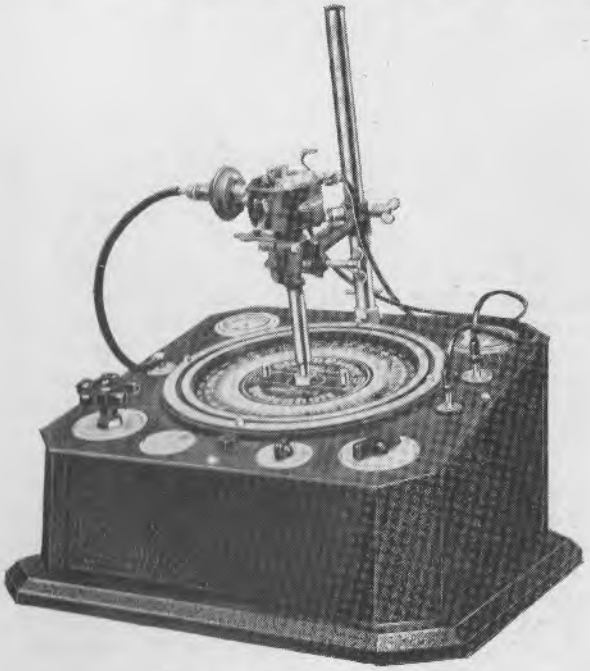
What the Distrib-U-Scope shows about the Distributor:

1 Worn cam
2 Point bounce
3 Contact dwell
4 Worn distributor shaft
5 Synchronization of breaker points
6 Worn breaker plate
7 Mechanical spark advance
8 Vacuum spark advance
9 Point creepage
10 Worn distributor bushings
11 Insulation leakage
12 Grounded or shorted breaker points or breaker plate
13 Weak breaker springs

Practically every car that comes into your shop needs distributor service. The performance of the modern engine is more dependent than ever upon efficient distributor action. Wear alters original factory setting causing low efficiency, wasted gas, and loss of power. Distributor should be checked and adjusted at least every 5,000 miles.

Every well informed mechanic knows that synchronizing contact points is only one of the important functions of any thorough distributor test instrument. All parts of the distributor must be checked including the shaft, contact springs, cams, vacuum advance, synchronization. All these tests and more are made by the Distrib-U-Scope.

The Distrib-U-Scope has six paralleled bands of alternating red and blue lights on the dial, so that they are more easily explained and understood by the customer, and mounted on attractive metal cabinet with compartment for storage purposes.



(Model 859 Bench Type)
Tool No. S. T. 2018

The bands of lights show not only the time of the spinning of the points, but also the closing. The rotating light actually shines brilliantly the entire time the points are open. Consequently the action of each individual cam lobe is shown exactly and clearly. This feature is impossible with testers employing meters which show only the average contact dwell of all lobes, whether worn or perfect.

The model 859 is exactly the same instrument as model 857, except that the cabinet is omitted. Model 859 is recommended for service stations wherever bench or counter mounting is preferred. It takes little room and is easily moved from place to place and set up.

Standard equipment includes checks, adaptors leads, etc., necessary to accommodate all makes of distributors, including Packard.

Double Duty Voltmeter

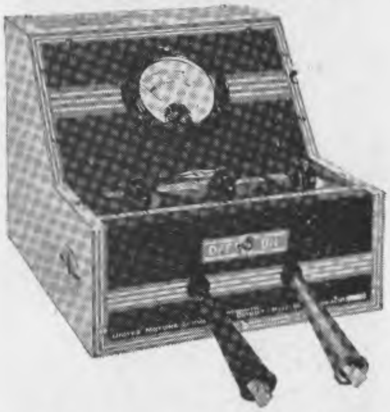
Here is an all purpose Voltmeter built to meet the present day needs of every automotive electrical service man. This precision meter is provided with two scales, one calibrated 0 to 10 volts and the other 0 to 3 volts. The meter normally indicates on the 10 volt scale and the 3 volt scale can be used by merely depressing the small push button near the top of the meter. The 3 volt scale is also SUPPLEMENTED by a special scale divided into 3 colored sections labeled Good, Fair and Bad, to show battery cell condition.

For Checking Switches and Connections
For Checking Lighting Circuits and Connections
For Checking Generator Circuit and Connections
For Checking Regulator Operation
For Checking Starter Circuit and Connections
For Checking Ground Circuits for Resistance
For Checking Voltage Drop in Cables
For Checking Battery Circuit Connections
For All Automotive Electrical Trouble Shooting

Koilster

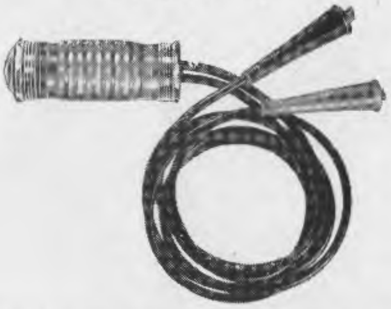
The only coil tester that definitely and accurately discriminates between good and bad coils. The Koilster makes 4 important tests: (1) Short-Circuited Turns, (2) Open Circuits, (3) Insulation Breakdown, (4) Abnormal Core Losses. Inductive compensator assures correct readings, under all conditions.

4-Way Condenser Tester



Direct reading, simple in operation. Makes 4 vital tests: (1) Breakdown, (2) Capacity, (3) Leakage, (4) Damping. The only condenser tester which will test a condenser for damping effect, which is the main reason for premature breaker point failure and high speed miss.

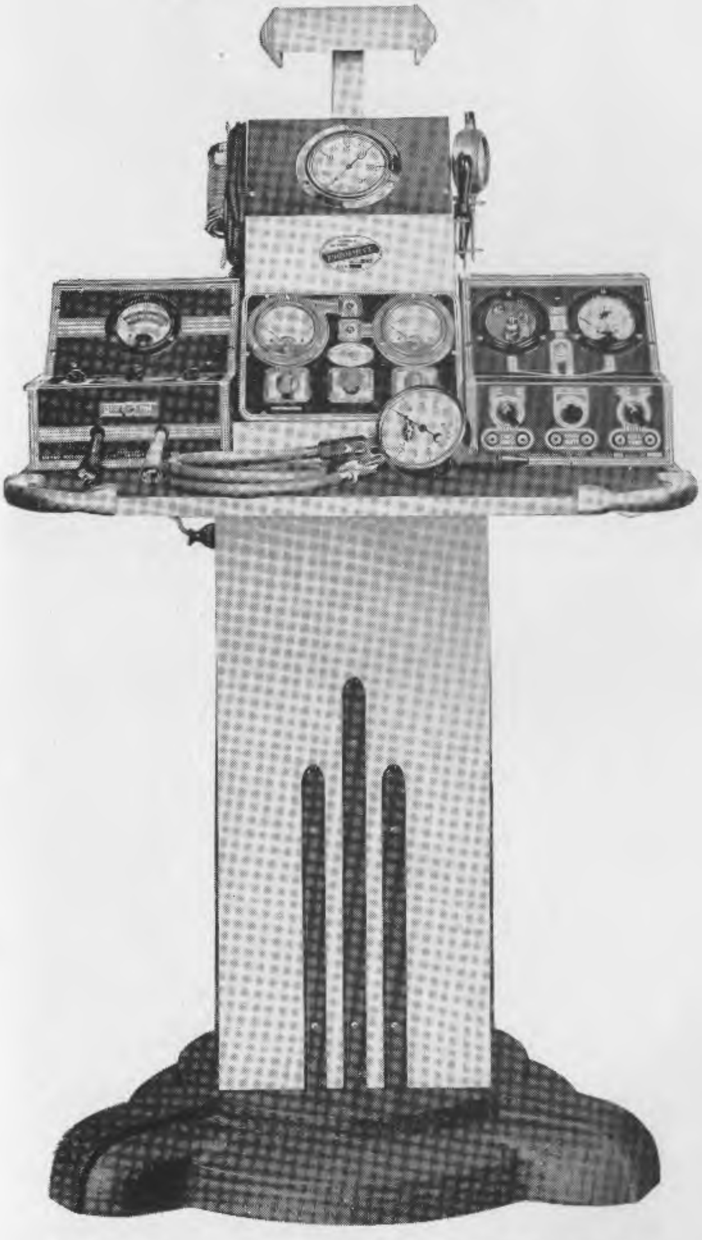
Syncrolamp



Employs the principle of light synchronized with motion. Operates with the engine running and checks the exact time the ignition occurs in relation to piston travel. Shows the exact action of the automatic governor, indicating if the springs are weak, permitting a too rapid advance, or if the governor is in a frozen condition, permitting no advance. Checks the distributor shaft indicating if the bushings are worn or if the shaft is sprung.

Ekonomist

For a complete Motor Analysis

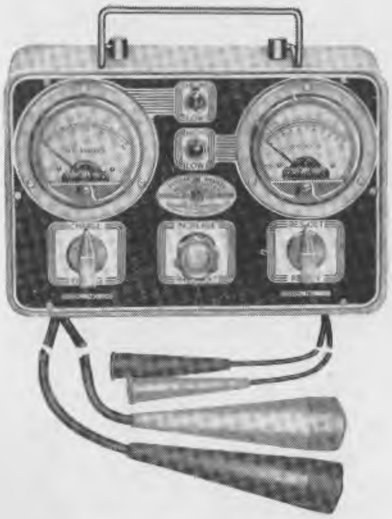


The Ekonomist combines advanced design precision instruments into one complete portable unit. Can be readily moved over service station floor direct to car to be serviced. Use the direct method—show your customers true operating condition of their motors before and after servicing.

Each individual testing instrument specifically designed to make approved tests, according to specifications of manufacturer of unit being tested.

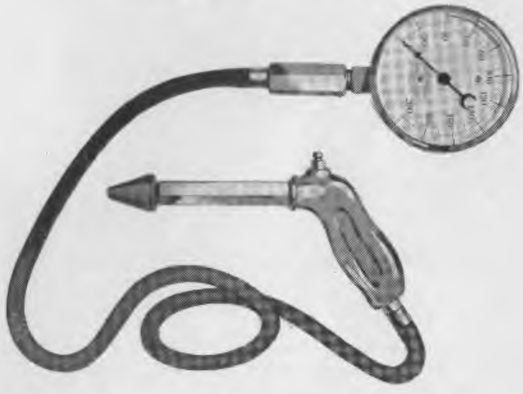
Complete operating instructions and technical data furnished in book form with each individual unit included with the Ekonomist. Each book is written in concise, understandable language and contains ample diagrams illustrating operation and function of instrument.

A-V-R Electro-Check



A compact portable unit, combining ammeter, voltmeter and variable resistance. A versatile instrument for setting generator charging rates accurately, adjusting regulators and relays and taking lamp and accessory load readings and many other important tests. Grade "A" Meters.

Compression Tester

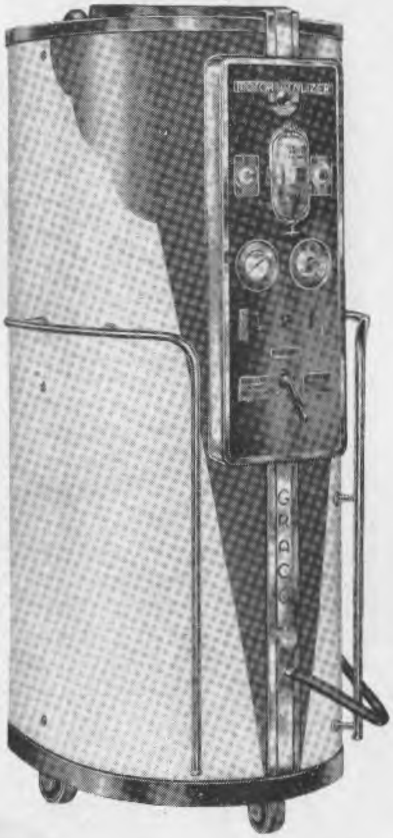


For testing individual cylinder compression pressures. A high-grade 200-pound gauge with gasoline and oil resisting hose and special designed pistol-type gun. Gun specifically designed for universal use in motor compression testing. Quick positive relief valve. Pressure gauge can be held so car owner can read indicated pressure while test is being made, enabling mechanic to Show and Sell.

Vacuum Gauge

An improved type, mechanical vacuum gauge for carburetion and motor service. Special automatic metering device incorporated in unit to assure accurate readings at any pressure.

Motor Vitalizer



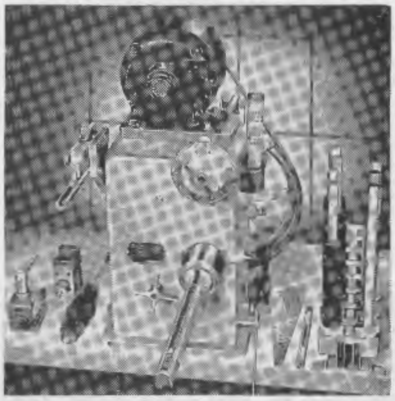
After nearly two years of careful engineering research and experimentation, introduces a new unit for performing a new and profitable automotive service—the Vitalizer. This unit does just what its name implies. It cleans the sludge and gum deposits from crankcase, engine bearings, piston rings, and valve stems . . . and in doing so it increases the compression rating of average motors from 10 to 15%. This cleaning operation gives motors new pep and increases their efficiency.

What's more, the entire operation of the Motor Vitalizer is just as simple as operating a gas pump . . . and just as fool-proof. This is accomplished by clever arrangements of the controls, which includes a new type of control valve and a universal hose adapter that fits all crankcase drain openings.

In addition, the Motor Vitalizer is very attractive in appearance and offers an unusual opportunity for showmanship in its operation. Lighted glass gauges show the customer clean solvent running into his motor and dirty solvent running out, demonstrating that his motor is actually being cleaned.

The Motor Vitalizer is new and modern in every detail. Put it to work in your lubrication department. Its cost of operation is low, the additional income it will bring is very much worth while, and it will open a whole new field of service.

Piston Pin Hole Grinder



With Foot Feed Up and Micrometer Stop
Model—LB

Equipped with General Electric, ¼ H. P., 110 volt, 60 cycle A. C. motor. Special motors obtainable at extra charge.

Motor driven; complete with Foot Feed-up and Micrometer Stop, 4 Roughing and 4 Finishing Mandrels (Range .720″ to 1.080″), 4 Roughing and 4 Finishing Stones, Truing Sleeves, Pin Fitting Gauge, Pin Hole Brush.

Model LA Pin Hole Grinder—Shipped set up, ready for work.

Positive Accuracy—Positive Control

Foot Feed-Up—Stone is expanded or retracted by movement of foot pedal.

Micrometer Stop—Make it easy to duplicate sizes—prevents going oversize.

Cutting Speed—.010″ to .015″ per minute in bronze, .004″ to .006″ per minute in aluminum.

Accuracy—Guaranteed within .0001″ (one ten thousandth).

Work Handled—All small hole Grinding jobs in the general repair shop or car dealer service department.

Quality of Work—Grinds holes with full bearing surface—No bell-mouth—No chatter marks—perfect alignment of bosses.

Life of Jobs—Will be increased because it produces more bearing surface to resist wear from the pin.

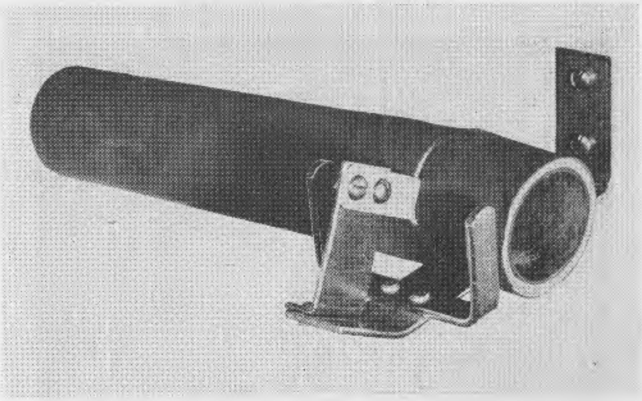
Finish which guarantees longer piston pin wear and eliminates come-backs.

Pistons, Connecting Rod Bushings, Water Pump Bushings, Hydraulic Brake Wheel Cylinder and many other small bushing jobs are easily ground and finished with the same set of Mandrels.

Mandrels can be changed from roughing to finishing or to a different size in 30 seconds.

The cutting tension is controlled through foot pedal.

Rubber Hose Cutter



Tool No. S. T. 2005

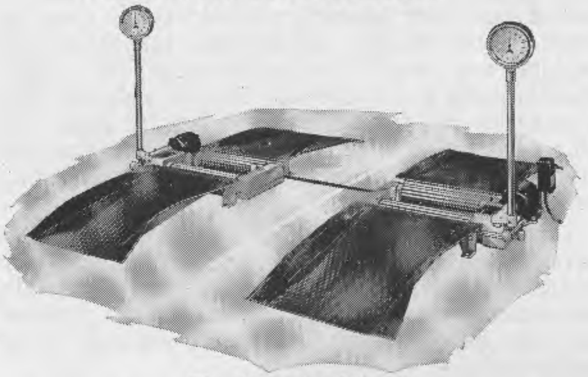
The most economical way to buy water hose is in 3 ft. lengths. The difficulty has been in getting a suitable tool to cut the hose. We are now able to furnish a hose cutter at a very economical price.

It is sturdy in construction and will make a neat and square job of cutting the hose.

Two Wheel Brake Tester

No. 1-L, Floor Mount Type—Elevated Scales.

Four Wheel Brake Tester



The Popular No. 5

Regularly supplied with restraining means for holding car on rolls—chain, hook and floor anchor.

This new brake tester is universal in action, ideal for testing brakes of tractor and trailer trains, trucks, buses and passenger cars.

This machine is perfectly adapted for accurate, fast brake inspections with the added advantage of precision checking in all brake corrective work.

These testers are standard equipment for factory brake testing in scores of cars, trucks, and in many plants. They must be right!

Compare These Brake Tester Features With Any Other Tester Now On Market

Elevated 8″ double-face scale dials.

Detects out-of-round drums.

Exposes greasy, oily linings.

Discovers glazed linings.

Predicts stopping distance accurately.

Gives the same readings consecutively.

Measures full braking ability of any vehicle.

Tests each brake through full revolution of wheel.

Why a Separate Brake Department?

Car dealers' service stations have handled brake work in the past usually as an incident. The work has commonly been done at any point in the shop where the car happened to be, and possibly while other work was being done. Service managers have contended that to departmentize brake work would slow up delivery. Possibly so. But modern business methods necessitate accurate costs. And accurate costs are impossible if work is scattered over the shop. Hence any delay or inconvenience caused by handling brake work in its own department is usually more than counteracted by better records and better control.

Independents have quite naturally fallen into the practice of separate departments for all their service, because they are a recent development in the service field and naturally installed modern methods. They had no traditions to live down, no building changes to make, no rearrangement of floor space. They were starting new, and could profit from the experience of others.

Since many cars are in the control of the women of the family during business hours, the station, its surroundings, and the sales methods used must appeal to women.

A clean station, clean uniforms on employees, clean throw-over covers, etc., are an absolute necessity. Promises of completion of work should be fulfilled, or customer notified.

Shop Cap

S. T. 819 White, (Specify Size)

These service caps are white and have the word "Packard" in red script on the front. They are made of light canvas type material and are particularly adaptable for shop use.

SHOP EQUIPMENT

Air Strainer Cleaner

Tool No. S. T. 2021

The average motorist has very little conception of the importance of the air cleaner's function and does not realize that the cleaner needs frequent service.

Too often in the service station we assume that this unit requires attention on a mileage basis, which, of course, is better than no attention at all, but is not enough. The frequency of attention is determined by the conditions under which the car is operated. If during the summer vacation the owner drives over dusty roads to golf clubs or summer resorts, the cleaner may require attention each week. The service salesman should become familiar with driving conditions of just as many cars as possible.

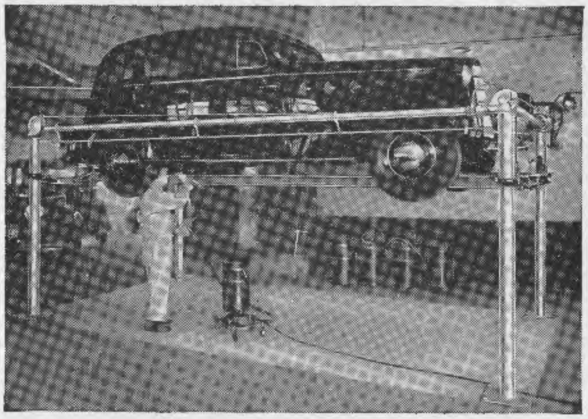
Air cleaning conditioning service can be merchandised as a valuable extra service well worth the small effort necessary to obtain this additional volume.

Points of interest in selling this service are that air is so light and invisible that we seldom think of it as having any weight and yet the average automobile engine requires about 7,500 cubic feet of air weighing 93¾ pounds to make a proper mixture with one gallon of gasoline. In this amount of air there is a surprisingly large quantity of dust and foreign material which must be removed before clean combustion and maximum efficiency can result.

Selling air cleaner service requires showmanship. The best way to do this probably is to use some type of modern equipment especially designed for the job. The equipment illustrated has been tested by the special tool department and is one that can be recommended for this work.

We are confident that you will find a good many of these jobs can be sold if you will get this work out where it can be seen by the customer and where an actual demonstration can be made. While the actual income per job is small, there is a very satisfactory profit, and it is a service which the average owner will gladly buy when it is called to his attention.

Electric Lifts Have These Outstanding Points of Advantage



Model Drive-On-Type No. 1052
Free-Wheel—No. 1002
Four Point Steel Cable Suspension Motor Driven
Floor Space Clean and Clear
All Working Parts Above Ground Quick to Install
Easy to Move
No Center Post or Cross Member Obstruction

It gives more working space. Has no center obstructions—does not interfere with service man—and the floor beneath the car is all clear for work. Lubrication, adjustment, inspection and repairs are much easier—because all under-chassis parts are available. And the service man goes about his work with complete freedom. No oil covered post to bump against and soil uniform. High raise and no center web provide exceptional head room under car.

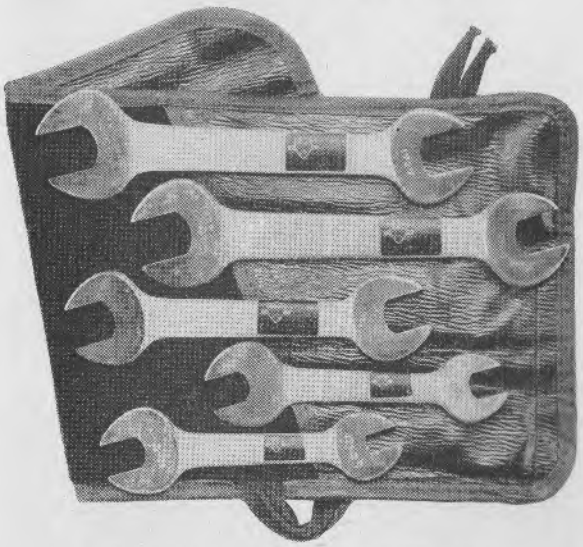
It locates anywhere. May be installed inside or outside—on upper floor or over basement—and easily moved from place to place. Especially economical where rock, quick sand or "made" land are encountered. All above ground, except easily installed post mountings.

It is absolutely safe. Combines electric elevator principles with four-point suspension on steel cables which are three to four times the required strength. Electric motor controls the lifting platform at all times—both raising and lowering—at constant rapid speed. Automatic safety devices and many structural features provide absolute safety under all working conditions and at all heights.

It is economical to own. Initial cost is substantially lower than for any other electric lift. Requires no investment in air compressor. Very low installation and operating costs. Total investment and operating costs are less than for any other lift.

It attracts customers. Unique design (with four posts above ground) offers opportunity to mount display signs advertising your service. You can really merchandise the service that you give with this lift.

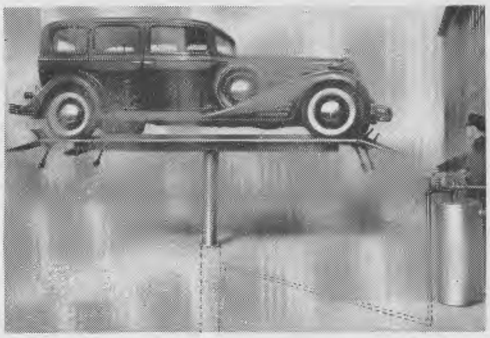
Mechanic's Tool Roll



Tool No. S. T. 612—All Models

The end openings are milled to give the greatest possible range of application without duplication. They come packed in the leatherette kit as shown.

Hydraulic Lifts

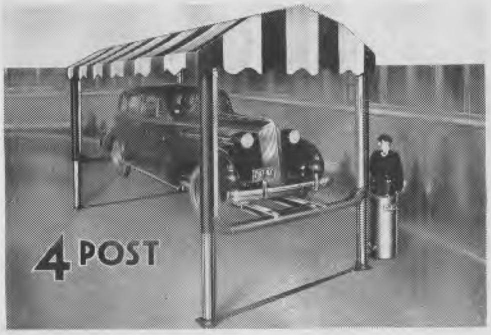


Air Operated . . . Remote Control . . . Raising and Lowering Valves Hand Operated Model 10-AR

The Remote Control Lifts are the most practical air operated Lifts yet produced. The oil is contained in a separate tank and the Lift is raised by introducing compressed air into the tank on top of the oil. Here the oil is checked under pressure by the hand control oil line valve. When the valve is opened the oil enters the Lift cylinder under pressure and the lifting operation is begun. The operator has complete control of the operation of the Lift at the hand valve point. This valve is a check against both the tank and the Lift. Releasing the handle of the valve automatically stops either the upward or downward movement of the Lift. In lowering the Lift the air pressure is first removed from the oil in the tank by opening the air valve. Then, when the hand oil line valve is opened, the oil returns to the tank under the weight of the car on the Lift. Release of the oil valve handle stops the Lift at any time. The maximum lifting capacity and speed is determined by the air pressure in the tank. Air-oil tank may be installed either above or below the floor level.

10-AR Style Lifts are locked on oil. The self-closing Lift control valve in the oil line assures positive control of lifting and lowering operations at all times. Rated capacity of Lift 8,000 lbs. Rise 56". Lifting speed 30 seconds. Standard equipment inlcudes Lift, Air-oil pressure tank. Lift control valve and hand air valve. Superstructure parts handsomely finished standard with a high luster lacquer color combination in Toluidine Red and Jet Black. Other color combinations on request. Operating valves chromium plated. The piston surface has a mirror finish.

Hydraulic Lifts

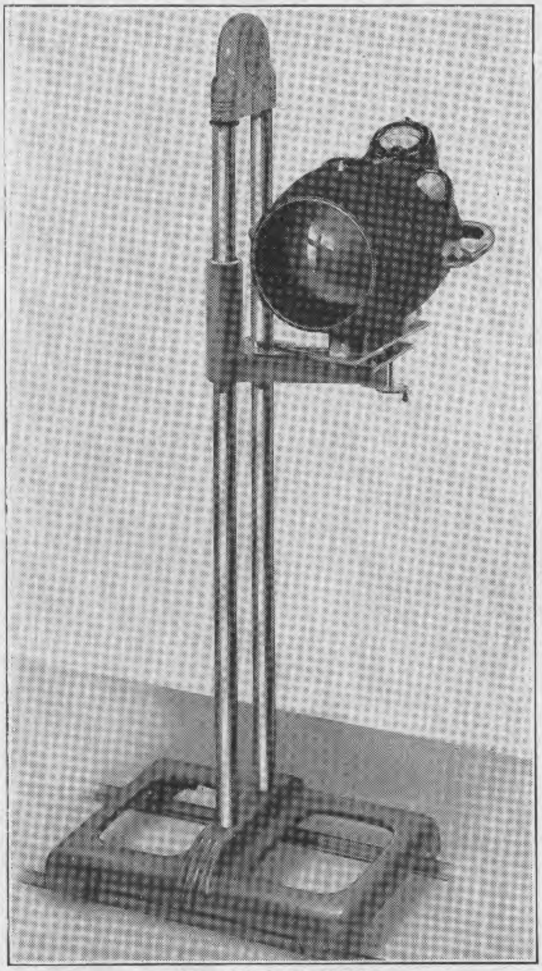


The Showmaster installed in Lubrication Department inside building. Portable and "Attention Getting."

Standard Model (No decorative canopy and plain finish). Decidedly practical especially where public contact with lift is infrequent.

Here indeed is the Automobile lift. Engineers in producing the Showmaster have established a new "high" in lift perfection. Sixty-three years devoted to the building of fine Hydraulic equipment including single post hydraulic auto lifts has enabled us to build the following features into Showmasters: Only thirty seconds required to raise the heaviest cars; lowers by gravity; reduces operating expense; especially recommended for second floor installations; artistic canvas canopy top furnished in any color combination desired; Canopy is colorful, business-getting, whether installed inside for show purpose only or outside for protection; Lift metal parts finished in regular black and red with chromium plate trimmings; Mechanical parts fully guaranteed.

The Electrical Robot Headlight Tester



Model J 1240-C

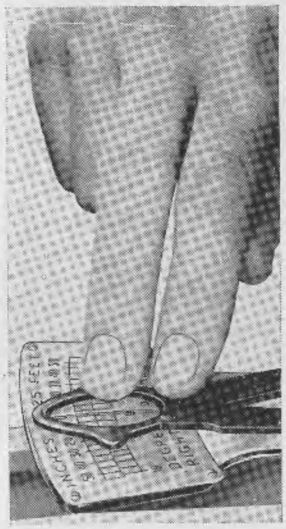
A great deal of progress has been made in the past few years in making the public conscious of the necessity of proper illumination from the standpoint of safety to the car occupants and the public at large. Most states today either have, or are contemplating compulsory motor vehicle, legislation requiring safety inspections and the adjustment of lighting equipment to certain standards.

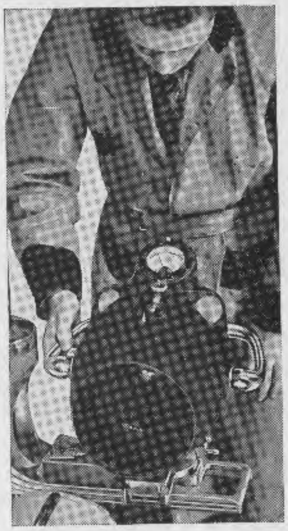
Recent surveys reveal the startling fact that faulty illumination represents the major cause of rejections and the failure to pass vehicle inspection tests. This opens up a splendid avenue through which, the shop properly equipped, can render a real service to his owners and participate in the profits made available.

The new "Robot" Headlight Tester is a most effective medium both for the merchandising of headlight service and quickly and accurately aims and tests the efficiency of the lights.

It is so simple to operate that anyone can accurately check and set lights closer than heretofore possible by skilled operators with complicated equipment.

The test head is quickly detachable from the stand, and lights can be checked for vertical aim and candlepower output at any part of the station convenient to the owner.





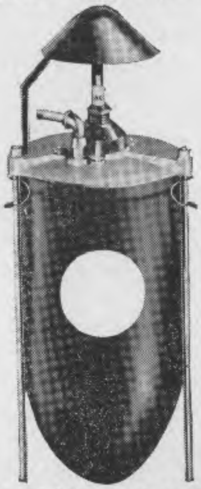
A self leveling device is an intregal part of the test head to compensate for floor slope, and a perfectly level floor is not necessary for the installation or operation.

Light settings are made electrically by simply setting the Robot for the aim desired and adjusting the headlight to that aim.

Light output is measured in candlepower and in such simple terms that it is readily understood by the car owner. Condition of the aim is measured in terms of inches above or below lamp center level at 25′ and sidewise aim is likewise measured in inches, which is as understandable to the customer as a 12″ rule.

Modernistic design immediately attracts customers. Finger tip control for quick adjustment for any headlight to fog light. . . Cadmium plated guide post. . . Cast iron base of modern design . . . produce a beautiful appearance. Special rollers make possible smooth and easy movement along steel track which is furnished complete with this equipment. A 30 page manual completely illustrated shows how to install, operate, test and aim headlights. Also included is a simple, proven sales plan that gets results, showing every step beginning with how to approach the customer, to closing the sales. Furnished free with each unit.

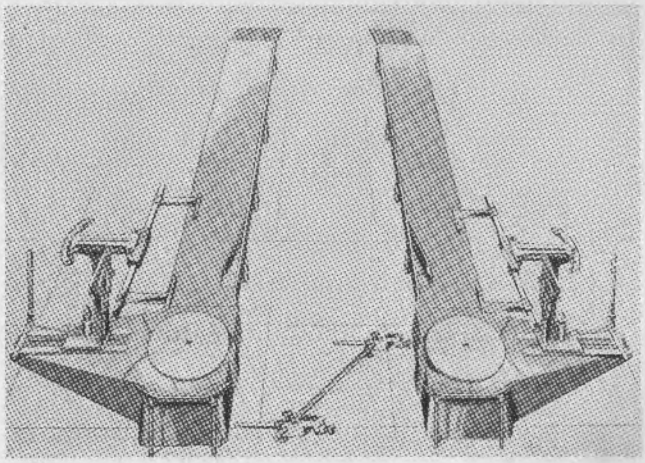
Spark Plug Cleaner



Tool No. S. T. 897
Tool No. S. T. 902—Cleaner Compound

An air-blast cleaner, using a new cleaning compound developed for removing the oxide film and carbon and oil coatings from the spark plug.

No. WR20 Wheel Aligner

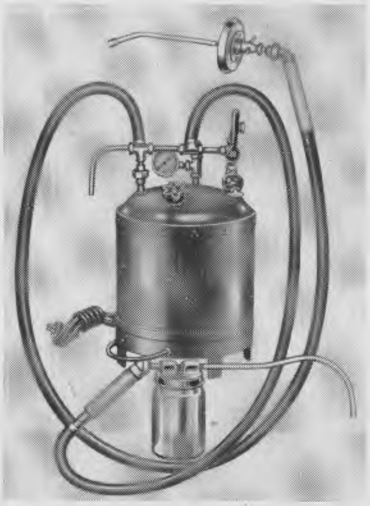


Caster, Camber, King-Pin Inclination, Toe-In, Toe-Out Steering, Geometry or Turning Radius are checked with One Unit

In the above picture we show the Model WR20 Wheel Aligner equipped with the extra wide runways. This is exactly the same as the No. 20 except it has 14½″ runways instead of 12″ runways of the No. 20.

Wider runways have some advantage over the regular width although they are not absolutely essential. They are easier to drive on to and they accommodate various tread widths to better advantage. It operates exactly the same as the Model 20 as it has exactly the same checking head units.

Hot Oil Flusher for Differential and Transmission Gears



Your attention is called to a method of flushing Hypoid differentials and transmission gears which offers some very interesting possibilities for saving in time and labor, and stimulating further interest in lubrication service.

This machine applies six streams of hot flushing oil under a recommended air pressure of 35 lbs. The heating unit is thermostatically controlled, the oil being heated to 175 degrees at a cost of about ½c per car serviced. It requires from 2 to 2½ quarts of flushing oil to flush and rinse the gear case clean.

This Flusher is equipped with a Suction unit for removing metal particles, grit and last drainings from the bottom of the case. In the vacuum operation, full air line pressure is used. It will be noticed separate hose lines and fittings are used for pressure and suction.

The drain is kept open during the flushing operation and when suction line is used, the waste oil is pulled out into removable glass jar. The waste oil is not returned to the tank.

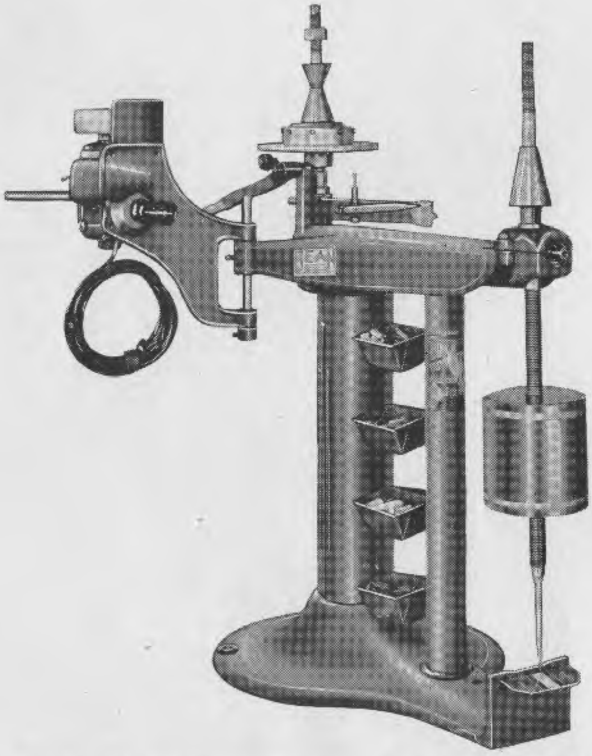
About 2 to 2½ quarts of hot flushing oil are required per job. The suction unit is operated under full air line pressure, final drainings being pulled into removable glass jar.

An interesting point to consider is the merchandising value of a piece of equipment of this kind. The idea of hot flushing should appeal to many of your customers, and the service should command a price that shows good profit.

There is no waste oil returned to the tank.

Machine is complete as illustrated, ready to hook up, plug in and operate.

Combination Wheel Balancer For Both Static and Dynamic Balance



Combination Balancer Equipped with Electric Light for Reading Scale

No. 54—DS

Static Balance

A wheel and tire assembly are in static balance when one half is balanced against the other half in any position so that it will remain stationary on its spindle when placed in any position, and will not have a heavy part that will always come to rest at bottom side. Static unbalance produces a severe shake to the front end of the car.

Dynamic Balance

One of the main causes of dynamic unbalance is a wheel and tire assembly that wobbles and does not run in a true plane due to a slight wheel run-out, or tire that is heavier on one side. When such a wheel is run on the road it tends to find a straight rolling. This tendency is evidenced when a dynamically unbalanced wheel is revolving on a dynamic balancer. The tire and wheel run true and the spindle wobbles. The effect is to produce a vibration to the spindle and a shake at the steering wheel usually most pronounced between forty and fifty miles per hour.

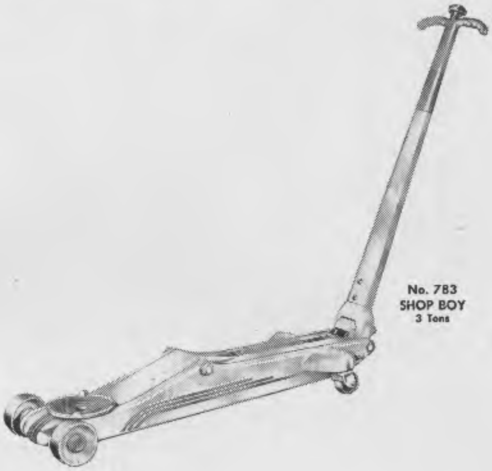
Hydraulic Jack

Tool No. S. T. 788

3-Ton Model No. 783

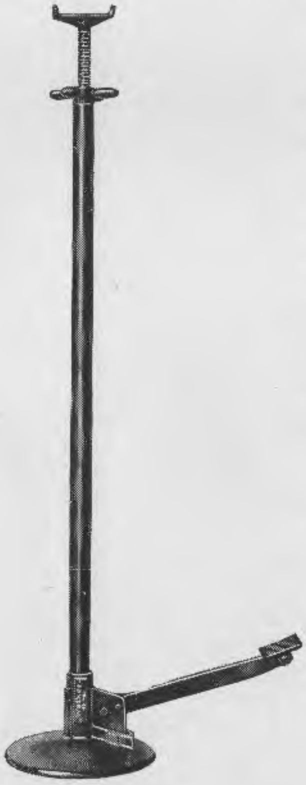
Roll-A-Car handles are made extra long for handling the new cars, and they're reinforced for greater rigidity.

Note the long, low, streamlined design of No. 783 Roll-A-Car. It goes right under all the cars, new or old, to any lifting point.



Lubricating Hoist Rocker Jack

No. 700—Hi-Boy

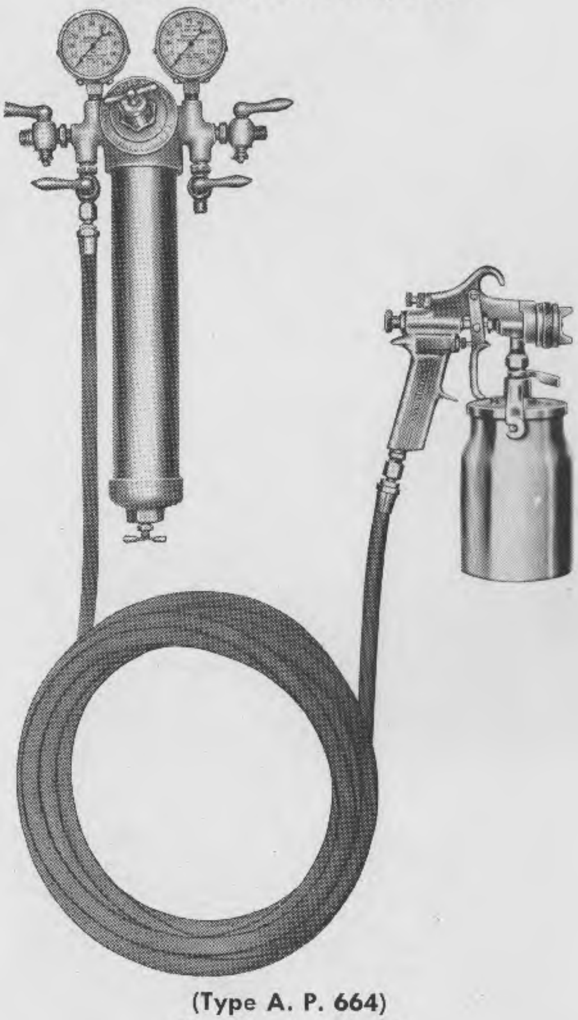


The Hi-Boy Rocker Jack enables you to rock the car on lubricating hoist or over a pit to detect and remove all hidden squeaks, to spread spring leaves for applying lubricant spray, and to free up frozen shackles.

Foot pedal has two positions. Selected by placing the pivot pin in either of the two sets of holes. One position gives the jack a one inch stroke, the other a two inch stroke.

Show your prospect how this special rocker jack improves efficiency and insures thorough lubrication service.

Paint Spray Finishing Outfit



(Type A. P. 664)
Tool No. S. T. 2010

Designed to furnish efficient spray finishing equipment for average size work. All parts are identical with those included in the larger and higher priced outfits only that fewer items are included. This is the smallest and lowest priced spray finishing outfit in which the standard type MBC spray gun has been included. Six automobiles a week can be refinished from the bare metal.

This spray gun with feather-touch control consists of an air actuated piston which relieves the spring tension on fluid needle when the air valve is open. Trigger pull, therefore, need be only enough to open the air valve. The needle seating spring is not compressed by trigger pull; air pressure does this automatically without any effort on the part of the operator.

The air transformer removes oil and water from the air; it filters and regulates it, indicates regulated pressure and provides air outlets to spray gun. Various finishing materials and spraying conditions require different air pressure. To increase the atomizing air pressure, turn the regulator adjusting screw to the right. To decrease the atomizing air pressure, turn the regulator adjusting screw to the left.

Moisture collects in the base of the transformer from which it is drained by turning the drain cock to the left. Drain transformer daily. Should there be an unusual amount of moisture in air it may be necessary to replace the waste sack located in the condenser tube with a clean dry sack. The old sack can be dried and used again.

It has two gauges, one for indicating the main line pressure, and the other indicating the regulated pressure delivered to the spray gun. The valve can be set for any desired pressure. This insures uniform air pressure. Two outlets on the left side have regulated air pressure, and the two outlets on the right side have main line air pressure.

Hydraulic Jack

Model No. 1000—3½ Ton

After five years of research and experiment, after thorough testing in shop and on the road, our engineers, who have been providing Jack for 63 years, now offer the "LIFTMASTER." In design, materials and workmanship they offer what they candidly believe to be the utmost in Hydraulic Jacks.

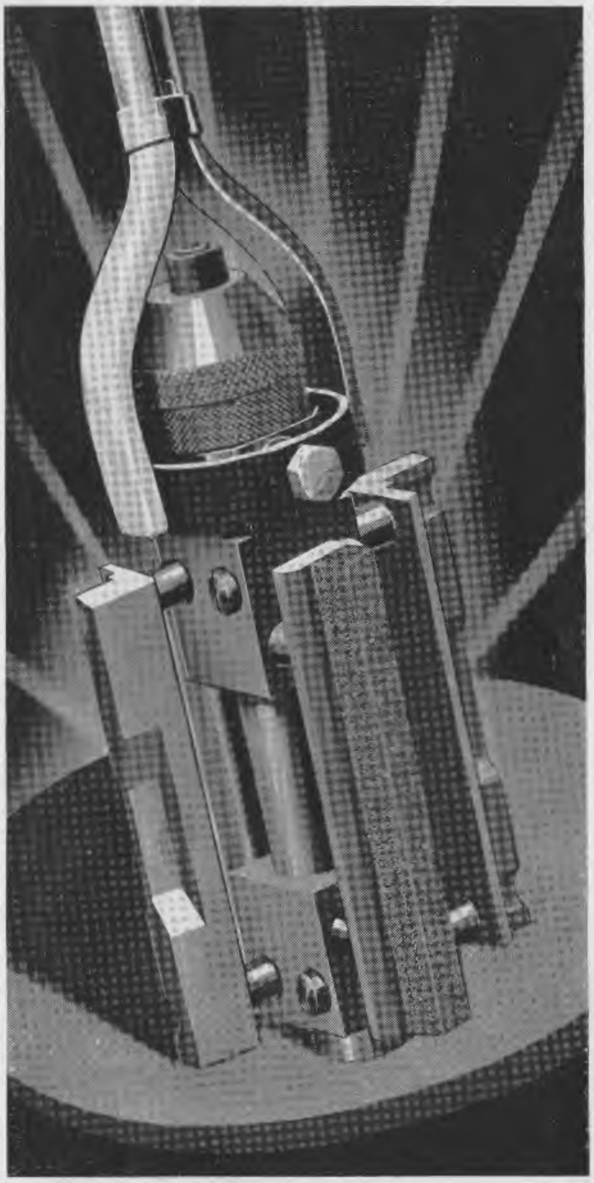
The Hydraulic pump is completely enclosed to reduce maintenance and all other parts are easily accessible for inspection and cleaning. Authorized service stations are maintained in the principal cities of the United States and you are invited to have your "Liftmasters" inspected at any time free of cost.

Dressed in brilliant black and red enamel with the handle grip of polished chromium, these Jacks add a colorful touch to the most modern service station.

Here are Jacks for every purpose. Trim, sturdy, efficient and priced right, the "Liftmaster" is destined to be this year's most popular garage equipment.

SHOP EQUIPMENT

Cylinder Grinder



Tool No. S. T. 2012
(Grit Remover is extra equipment)

Handles all motors in the chassis.
Rapid cutting—positive adjustment.
½″ H. D. Drill pulls it easily.
Sharp free-cutting stones require less wall tension.
Produces highly polished cylinders.
Accuracy guaranteed within .0005″.

The cylinder grinder produces a straight round hole. It is easy to operate, does fast accurate work, and will give years of satisfactory service.

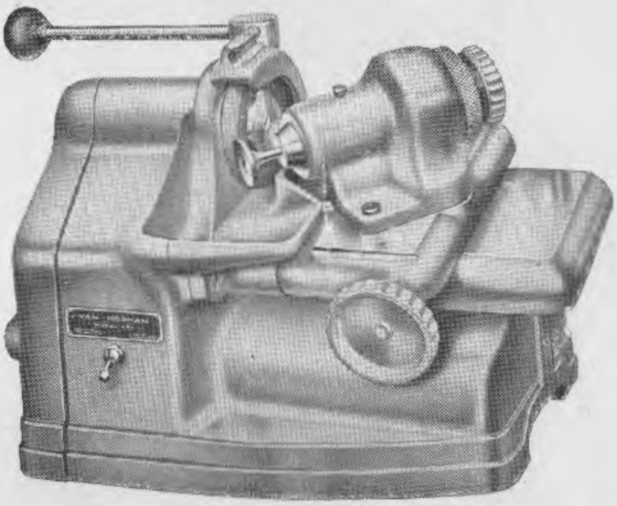
It removes from 2 to 4 thousandths per minute with a guaranteed accuracy of half a thousandth. Adjustment is simple, easy and positive. Operates with standard ½ inch drill.

Stones can be changed from roughing to finishing in 30 seconds. They stay sharp and cut with very light wall tension. The universal joint type allows honing at any angle, making it easy to grind out block including V-12 and motors having the last cylinder under the cowl.

The grit remover is never in the way. It fits over and around the body of the grinder, and moves with the grinder from one cylinder to another. It is not necessary to get off the chassis and underneath the car while the job is being ground.

Motor and grip bag are supported by rubber covered hangers which hang on car door. The motor is specially built, is powerful, with self-oiling bearings, has a universal ¼ H. P. motor, and operates on 110 AC or DC current.

Valve Refacer

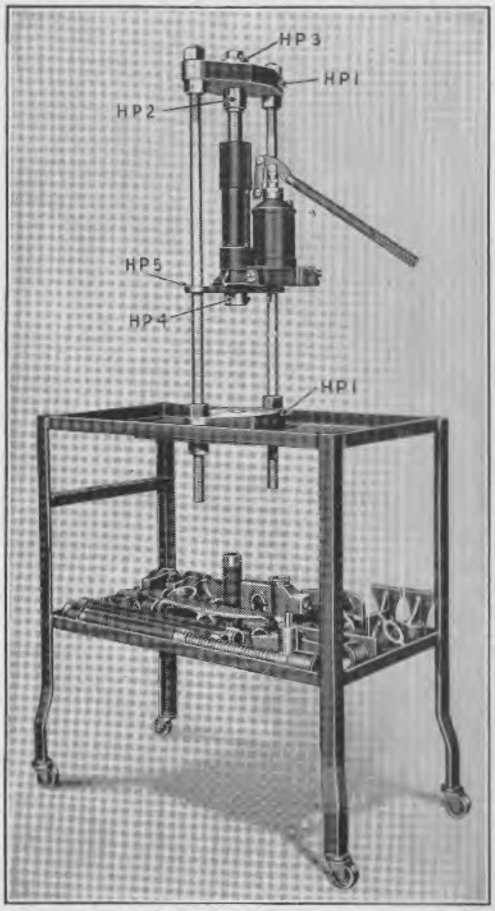


Model A. R.

A quality valve refacer at a price that assures profitable valve work. Machine is guaranteed accurate within .001″ (one thousandth of an inch) and is in every sense a precision tool. A machine of which any owner can be proud. Workhead is placed at 15° angle to horizontal and is held in place by two dowel pin screws. Permits adjustment for either 30° or 45° valves and likewise if at a later date owner wishes to convert machine to wet refacing, this can be done at minimum expense.

Model AR has capacity from 15/64″ to 9/16″ using split double-grip collet. Ball bearing wheel spindle; 4″ wheel; feed lever adjustable to suit any operator; ¼ H. P. motor; switch in front of machine. Ideal for large shops where a second and third machine is needed; for the small shop where original cost must be considered and for any shop wanting quality valve refacing at least possible cost.

Perfection Portable Press and Stand



These Frame, Body, and Fender Tools have so many different uses and are in such demand that they are seldom idle. They are now recognized as being just as important as any other tools in the shop.

They are needed in every shop for removing bushings, king pins, gears, bearings, piston pins, starter gears and rod bushings.

Starter gears and bent wheel rims can be riveted with this equipment and the straightening of twisted bumpers, fender brackets and tie rods is very common. Because it is an all around utility unit you will be constantly finding other uses for it, so many in fact that you will keep it busy constantly.

It is easily moved around from one job to another so that you have the complete department at the job which saves time and money. It is a profit producer because it does more of your work and does it at a lower cost and it does the work correctly.

All of these jobs are necessary to quick and satisfactory service and yet these same tools produce additional revenue in other departments in frame straightening, body and fender work. The bending bar handles many service jobs at a profit.

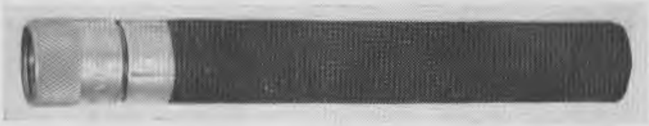
Nearly all collision work can be taken care of by these tools which in itself assures greater service volume and greater profits.

No other service offers such great possibilities at such a reasonable investment. It takes but a few service jobs with these tools to return the original cost.

The unit is rigid, assuring direct pressure to the desired point, with no possibility of slipping or pushing sideways because of the strong guide support of the side rods. The assembly head swings open, making it very easy to place axle shaft in press.

The stand is entirely of steel construction, electric welded and with plenty of room for the tools. It is equipped with large casters.

Automatic Water Saver



Tool No. S. T. 979

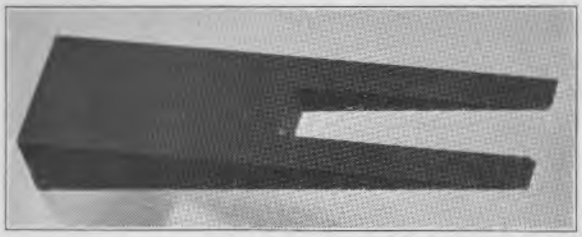
Saves 40 to 60% on water bills, as it is always off unless in actual use.

Saves heated water—by saving water save fuel.

Saves time in going to shut off and turn on water.

Saves repacking valve leaks caused by frequent turning on and off. Saves hose.

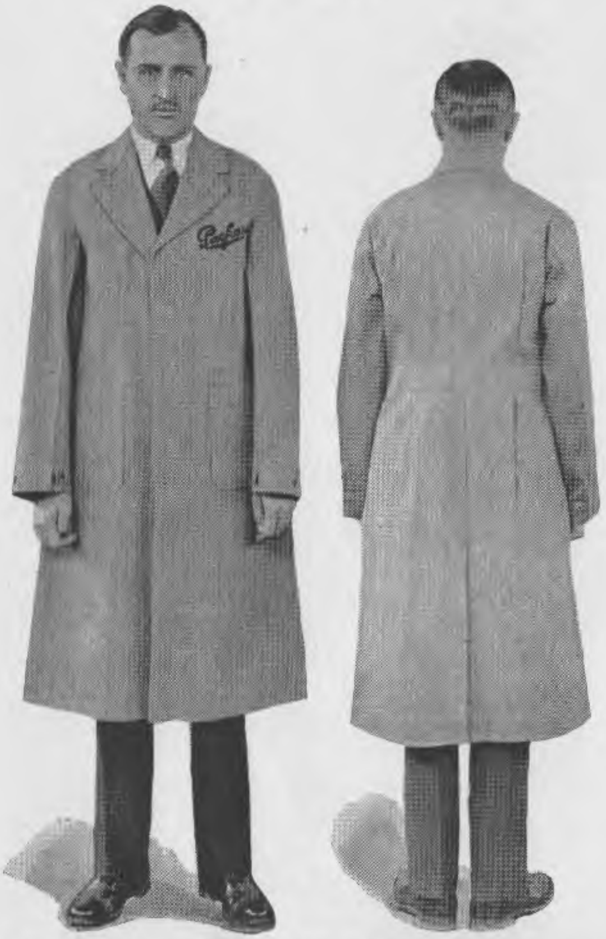
Shock Absorber Ball Joint Wedge



After Frame No. 326143 to No. 331126—Model 826
After Frame No. 189597 to No. 191126—Model 840
Tool No. S. T. 811—Models 826-840

This wedge will remove the upper and lower ball joint connecting link on 826-840 shock absorbers.

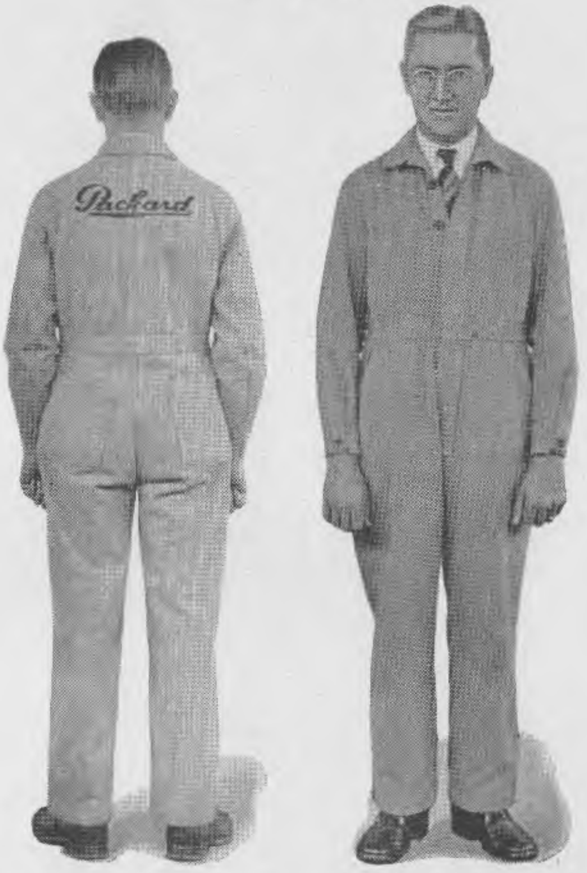
Service Coat



S. T. 600—Tan—Size 36 **S. T. 350—White—Size 36**
S. T. 601—Tan—Size 38 **S. T. 351—White—Size 38**
S. T. 602—Tan—Size 40 **S. T. 352—White—Size 40**
S. T. 603—Tan—Size 42 **S. T. 353—White—Size 42**
S. T. 604—Tan—Size 44 **S. T. 354—White—Size 44**
S. T. 605—Tan—Size 46 **S. T. 355—White—Size 46**
S. T. 606—Tan—Size 48 **S. T. 356—White—Size 48**

A neatly tailored courtesy coat made of cotton covert. The material is preshrunk before cutting and is unexcelled for laundering. Be sure to order the size coat that you actually wear.

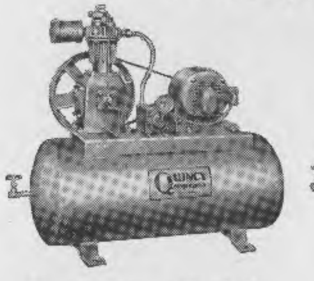
Mechanic's Suits



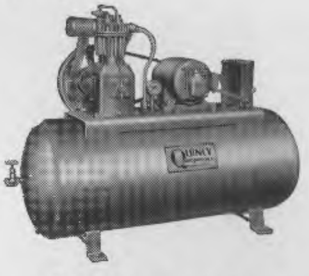
S. T. 660—Tan—Size 36 **S. T. 450—White—Size 36**
S. T. 661—Tan—Size 38 **S. T. 451—White—Size 38**
S. T. 662—Tan—Size 40 **S. T. 452—White—Size 40**
S. T. 663—Tan—Size 42 **S. T. 453—White—Size 42**
S. T. 664—Tan—Size 44 **S. T. 454—White—Size 44**
S. T. 665—Tan—Size 46 **S. T. 455—White—Size 46**
S. T. 666—Tan—Size 48 **S. T. 456—White—Size 48**

These garments are made of preshrunk cotton covert. They are full cut and neatly tailored so that they fit neatly without binding. Order to size as the garments are cut oversize from preshrunk material and will not shrink appreciably when washed.

Air Compressors



Single Stage Model



Two Stage Model

Vertical Tank Model

SINGLE STAGE COMPRESSORS

Models FA-6, FA-7 and FA-8 are single cylinder compressors. Models FA-12, FA-16 and FA-27 are duplex cylinder compressors.

Equipment: Timken Main Bearings. Lynite Connecting Rods. Light-weight Automotive Type Pistons. Disc Plate Valves with Removable Valve Seats. Automatic and Positive Oiling System. Dust Proof Crankcase. Mechanical Unloader. Fan Type Flywheel. V-belt Drive. Each outfit supplied with nationally known motor, 25 feet ¼″ air hose with chuck and fittings, intake muffler and silencer. Motor automatically cuts in at 120 lbs. and cuts out at 150 lbs. Each outfit complete and ready for operation when lubricated and attached to service lines.

Model	Motor HP.	Cu. Ft. Displ.	Tank Size Inches	Tank Size Gals.	Approx. Ship. Wt.	Price
FA-6	½	2.8	16 x 36	32	400	$135.00
	¾	4.2	16 x 36	32	420	150.00
FA-7	1	6.0	16 x 36	32	450	166.00
FA-8	1	6.0	20 x 48	65	525	180.00
	1½	8.6	20 x 48	65	550	190.00
FA-12	2	10.0	20 x 48	65	650	235.00
FA-16	3	17.2	20 x 48	65	750	302.00
FA-27	5	26.2	20 x 60	80	1250	372.00
	7½	34.0	20 x 60	80	1350	540.00

Prices quoted are F. O. B. Quincy, Ill. and cover compressors equipped with 3-phase, 220-240 volt, 60 cycle motors. For single phase, 110-220 volt, 25, 50 or 60 cycle and DC service prices will be furnished upon request.

TWO STAGE COMPRESSORS

Equipment for models FG-6, FG-8 and FG-8 same as for single stage compressors. Equipment for model FG-80: Oversize Timken main bearings. Crankshaft is drop forging, light weight automotive type pistons fitted with three compression and one oil ring, pressure lubrication, valves with removable seats, copper finned intercooler, fan type flywheel, V-belt drive, positive mechanical unloader, 25 feet coupled air hose, intake muffler and filter.

Model	Motor HP.	Cu. Ft. Displ.	Tank Size Inches	Tank Size Gals.	Approx. Ship. Wt.	Price
FG-6	¾	3.7	16 x 36	32	500	$180.00
	1	5.0	16 x 36	32	525	200.00
FG-8	¾	3.7	20 x 48	65	600	190.00
	1	5.0	20 x 48	65	625	210.00
FG-10	1½	7.13	20 x 48	65	650	215.00
	2	9.3	20 x 48	65	700	255.00
GV-80	3	13.3	20 x 60	80	1150	327.00
	5	21.6	20 x 60	80	1250	3700.0

Prices quoted are F. O. B. Quincy, Ill. and cover compressors equipped with 3 phase, 220-440 volt, 60 cycle motors. Prices on single phase and DC motors furnished on request.

VERTICAL TANK UNITS

Furnished with single stage compressors equipped with 1, 1½, 2 and 3 horsepower motors. Tank size 20 x 48. Prices same as for FA-8, FA-12, FA-16 and FA-27. Furnished with two-stage compressor outfits equipped with ¾, 1, 1½, 2 and 3 H. P. motors. Prices same as for FG-8, FG-10 and GV-80. Tank size 20 x 48.

All prices are subject to change without notice.

SHOP EQUIPMENT

Valve Service Cabinet and Tools

Model 688 Complete as listed consists of following:
No. 677 Valve service cabinet
No. 620 Valve face grinding machine
No. 1725 Valve seat grinding set
No. 2070 Six inch bench grinder equipped with No. 451 wire wheel

The 1¼ H. P. motors for valve grinding machines, your option of 110 or 220 volts, 25, 30, 45, 50 or 60 cycle. The above in 1 phase if 2 or 3 phase is desired, specify on order. Same price applies, if D. C. motor is desired, add $4. to above price.

This cabinet is easily moved, mounted on large hard rubber wheels and is a compact demonstrator.

Valve seat grinder set for general garage work, for handling all cars with both hardened seats and cast seats. It contains: High speed driver, wheel holder, dressing tool, finishing and roughing wheels, pilots, and holders, indicator.

The six inch bench grinder has a dust proof ball bearing grinder, requiring no further lubrication. It comes complete with tool rests and two grinding wheels, one fine and one coarse.

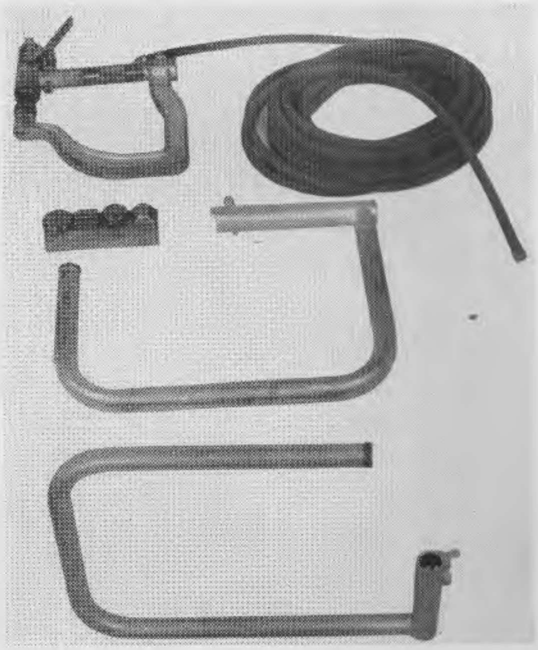
Auto-Displa-Lite

Tool No. S. T. 2017

The new Auto-Displa-Lite is ideal for showroom car display and in your service department for interior repairs or cleaning.

The Auto-Displa-Lite is fully adjustable to fit any make car without harming interior. Only two minutes to install; just plug into any 110 Volt convenient floor socket.

Pneumatic Fender Iron



Model CP-521

Standard Equipment Consists of:

1 Fender Iron Complete.

3 Yokes 8½" reach x 7" Gap and 17" reach x 10" Gap.

1 Hammer Die and 5 Assorted Dollies.

50 feet Red Compressed Air Tubing with Fittings.

1 Wood Die Rack.

Extra Equipment—1 Yoke 14" reach x 19" Gap.

Here is a time saving tool. Fenders, doors, trunks, or body repairing is not a difficult job if the proper tools are available. You'll be surprised how easy it is, even without experience, to bump out damaged fenders with this pneumatic fender tool. Add this tool to your service facilities by securing this fender hammer now. Any mechanic can use it.

The fender must be raised with hammer to its original form. Then the tool does the finishing or smoothing out. This operation can be done so much quicker than by hand.

This pneumatic fender iron is operated by air pressure and it leaves the work so smooth that filing is unnecessary.

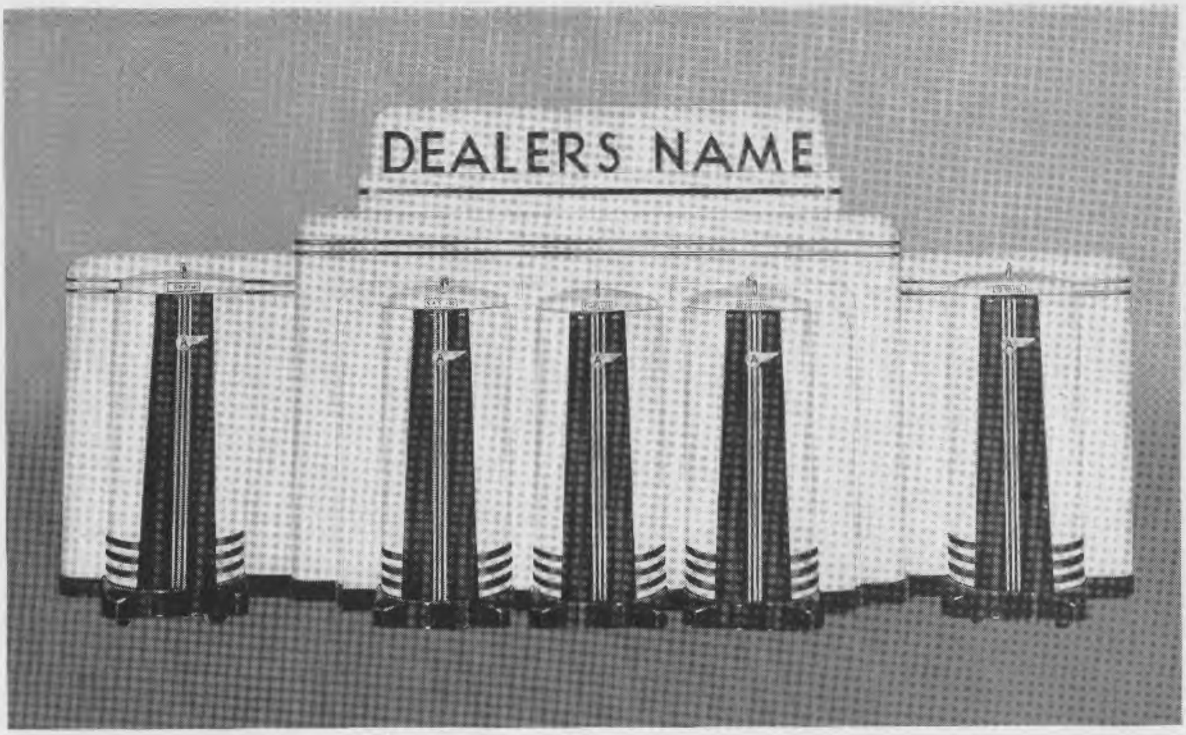
Before:

Photograph taken before the fender repair job was started. As in this and most other cases, the Fender Iron permits working without removal of fender or wheel.

After:

Restored to its original contour with a Fender Iron, this car is ready for the road. No tell-tale marks of a fender repair job, and the metal has not been stretched in obtaining the new-like smoothness.

SHOP EQUIPMENT



Alemiter Wall Display

The Alemiter Wall Displays provide the ultimate in lubrication equipment in design, appearance, and efficiency. The dealer with this equipment is assured of the most modern and attractive lubrication department possible which will attract customers and increase lubrication and service profits.

The steel display, finished in maroon and white, are available in a wide variety of sizes to fit any dealer's needs. Stationary lubricant pumps as required are recessed in individual panels, fitted together. Lubricants are piped to outlets located by the lifts. The main panel, available with or without wings, can be purchased separately to modernize present equipment.

The model illustrated above, No. 194, can be placed in a lubrication department for a small down payment and payments of only **66c per day.**

Model No. 194 contains a main panel and wings complete with one high pressure 100-lb. barrel pump; two low pressure 100-lb. barrel pumps for gear lubricant, all air-operated, and two portable drains.

Model No. 194 DeLuxe Wall Display $456.00

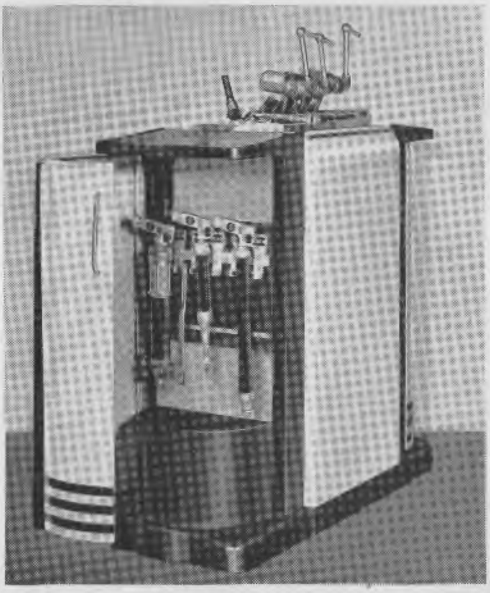
Center Stand and Hose Well →

Used in conjunction with a Wall Display or individual barrel pumps, the center stand is the most efficient, clean and modern way of dispensing lubricants.

At each end of the stand are write-up desks and cabinets, the doors opening to provide space for tools, rags, specialized guns, etc. Hose operate around pulleys which are out of sight in the well placed into the ground. Space is provided for any number of hose outlets up to seven—chassis lubricant, gear lubricant, motor oil, air, water, etc.—in lengths up to 14 ft. Dimensions 50″ high x 52″ long x 21″ wide.

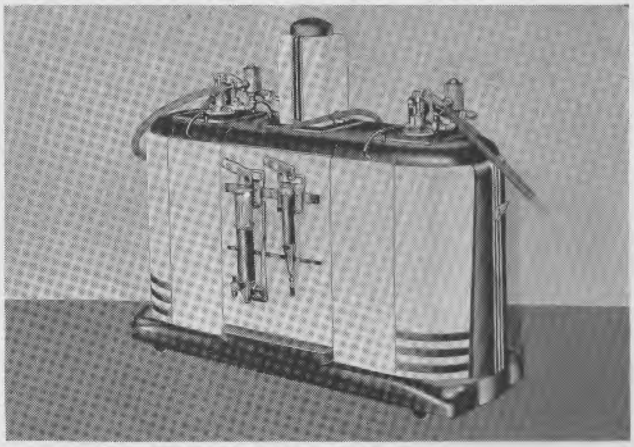
No. 6857 DeLuxe Center Stand Hose Well (less hose and valves) $215.00

No. 6857-A Center stand complete with 3-13-gear hose, 2-14′ chassis hose, 1-14′ air hose, and 1-14′ water hose . $389.85



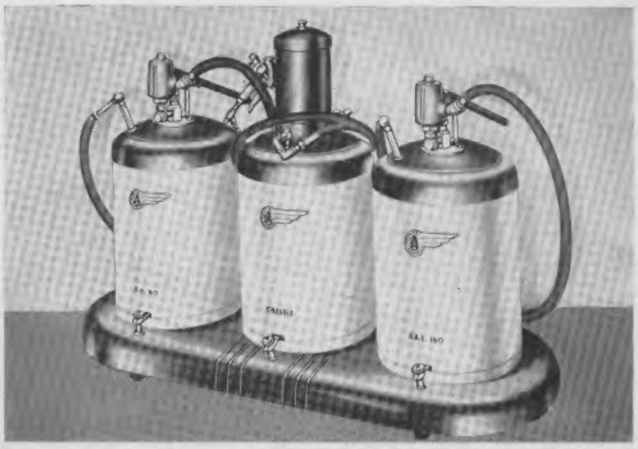
NOTE: Limited space prevents us from showing all different makes of lubricating equipment. We are in a position, however to give you information that you require.

Suggested prices shown are subject to change without notice.



Alemite 111........$395.00

Any dealer can modernize his lubrication department with this complete portable unit for only **57c per day.** Finished in maroon and white, it contains an air-operated high pressure pump for chassis lubricant and two hand-operated pumps for gear lubricants. Lubricants dispensed directly from standard 100-lb. drums. 4 Guns and Adapters for special lubricants are included. Dimensions: 48″ x 24″ x 60″.



Alemiter 101........$160.00

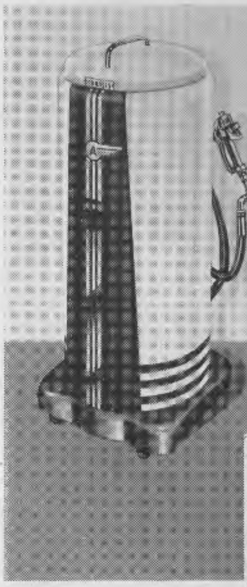
A complete unit to convert the smallest lubrication activity into a modern operation. It contains high pressure air-operated pump and two hand-operated gear lubricant pumps. Cost only **24c per day.** Pumps handle lubricant direct from either 25 or 50 lb. containers. Dimensions: 48″ x 20″ x 33″. Any of these pumps available individually as well as matching portable drain and specialized gun set.

100 Lb. High Pressure Barrel Pump

This new air-operated barrel pump, either portable or stationary, is designed for dispensing chassis lubricant from the original 100-lb. container at high pressure. The new shield has modern styling which will enhance any lubrication department. Dimensions: 50″ high x 20″ diameter.

No. 6803 De Luxe Portable Pump complete with hose and valve..........$152.50

No. 6805 De Luxe Stationary Pump.........$116.70



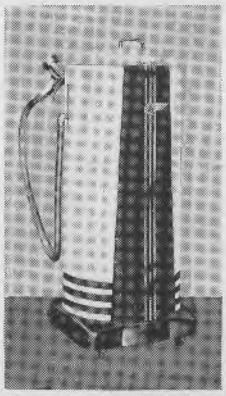
100 Lb. Low Pressure Barrel Pump

The low pressure pump for gear lubricants is either air-operated or hand-operated. In appearance and size it is the companion piece of the high pressure unit.

No. 6813 De Luxe Air-Operated Portable Pump, complete with hand meter, valve and hose...........$110.00

No. 6815 DeLuxe Stationary Air-Operated Pump.......................$80.50

No. 6820 DeLuxe Hand-Operated Portable Pump, complete with meter, hose and valve...............$52.50

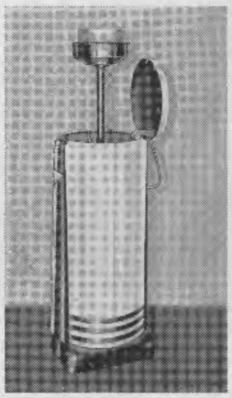


Motor Oil Dispenser

A new method of dispensing oil directly into crankcase.

Complete with hose, meter and valve.

No. 6888 . . $145.00



Portable Drain

Accommodates empty 100-lb. container, matching barrel pumps in design.

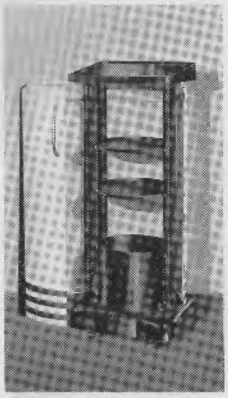
No. 6830.....$35.50

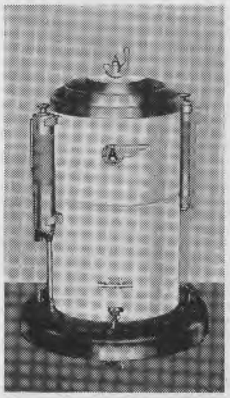
Write-Up Desk

Combines write-up desk and cabinet space.

No. 6866 Portable Desk....$42.50

No. 6867 Stationary Desk....$37.50





Wheel Bearing Service Unit

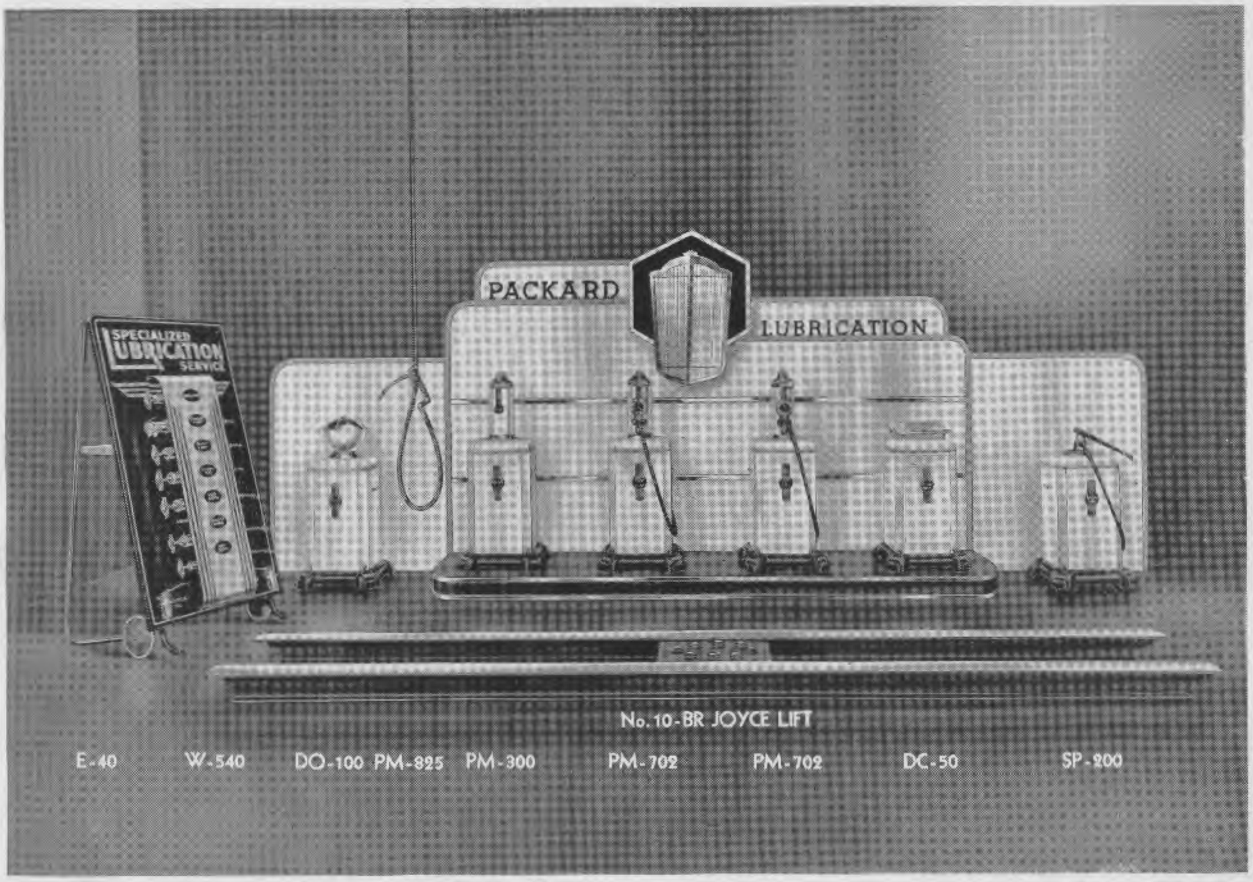
Contains bearing washer, packer, and space for lubricant and tools.

No. 6847 . . . . $30.00

Suggested prices shown are subject to change without notice.

SHOP EQUIPMENT

Packard Lubrication



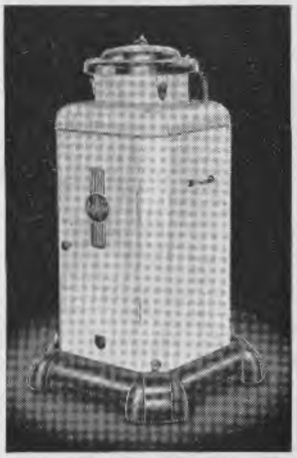
More showmanship in your lubrication department will invite increased sales—build service profits—that is why the Packard Motor Company has prescribed the use of a special Packard display background.

The equipment, definitely superior in design, will also impress your customers by its smooth, faultless performance befitting Packard service, and the nicest thing about it is that jobber will provide an easy purchase plan whereby your equipment will pay for itself out of profits from increased activity in your lubrication department. The official Packard Background is supplied in sections as follows:

Center Main Panels, 8′ x 12′, Wt. 335 lbs.	**$72.00**
Wings, 4′ x 5′, Per Pair, Wt. 90 lbs.	**16.00**
Equipment Platform 17′ x 30″ x 6″, Wt. 230 lbs.	**19.00**

Model HO-100 Hot Oil Gear Cleaner sprays hot flushing oil at high velocity into hypoid gear cases. It cleans the gears thoroughly with an unlimited supply of flushing oil which drains back into the unit for re-use. A thermostatic heating element keeps the flushing oil at constant velocity.... $97.50

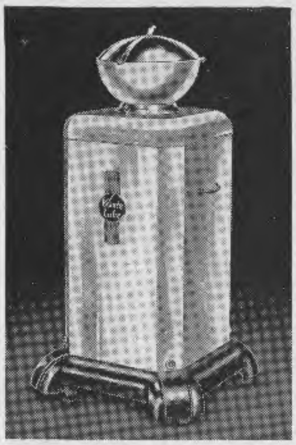
Model VC-100 "Graco-Vac" Vacuum Cleaner features attractive appearance as well as mechanical excellence. High powered three-stage fan moves 35 cubic feet of air per minute. Enclosed metal dirt-trap is easily removed for cleaning with brush type and "crevice type" nozzles........ $87.50



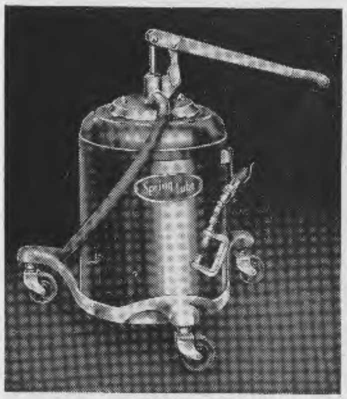
Suggested prices shown are subject to change without notice.

SHOP EQUIPMENT

Model SP-950 Spring Packer, 25-50 lb. capacity. Delivers spring compound from original container. Ideal for servicing metal covered springs, complete with Lubroclamp $37.50

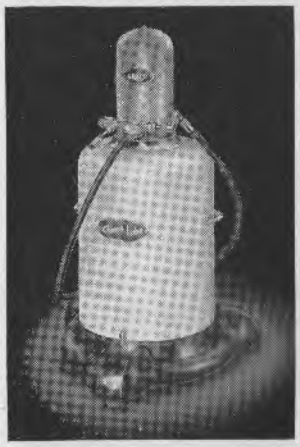


Model PM-950 High Pressure Chassis Lubricator; similar to PM-100 but 25 lb. capacity $92.50



Model PM-100 High Pressure Chassis Lubricator automatically dispenses lubricant directly from 100 lb. container; complete with necessary adapters $140.00

Model DO-100 Waste Oil Reservoir with telescoping funnel and combination cover and splash guard $35.00



Model HF-600 Turbulator is a low priced gear cleaner for differential service. It is air operated, electrically heated, sprays hot flushing oil at high velocity and circulates the oil at high velocity and circulates the oil back through the reservoir $15.50

Model AC-100 Utility Cleaner, a unit with many handy uses, cleans automobile air cleaners as well as small tools and parts. Manually operated, requires no air. . $27.50

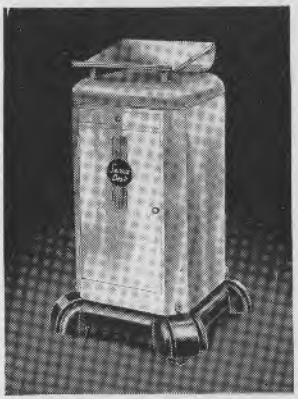
Model DC-50 Service Desk completes the uniform "eye appealing" facilities of the modern lubrication department when used with other Graco units and its handy drawer and spacious cabinet provide a convenient place for storing work order forms and clean rags. Finish: "Dulux Porcelaintone." Color: White with chromium trim and Black base $35.00

Model PM-700 Gear Lubricant Dispenser —air operated—fits 100 lb. container; complete, as illustrated $105.00

Model PM-702 Gear Lubricant Dispenser —same as PM-700 but with extra-long hose and no casters $105.50

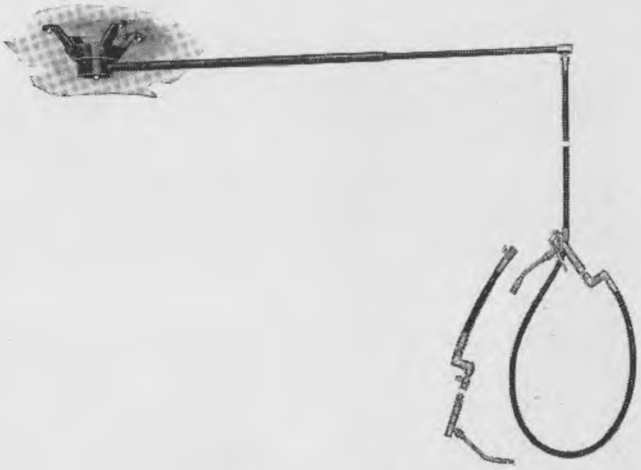
Model EP-700 Gear Lubricant Dispenser similar to Model PM-700 but hand operated; complete, as shown $59.50

Model EC-750 Gear Lubricant Dispenser similar to EP-700 but 25 lb. capacity . $42.50



Suggested prices shown are subject to change without notice.

Model PM-300 High Pressure Lubricant Supply Pump is used for pumping chassis lubricant from its original 100 lb. container through lubricant supply lines to the overhead outlet assembly. Unit is equipped with 4½ foot lubricant hose terminating in a ½ inch pipe union, 4½ foot coupled air hose with quick detachable coupler and automatic oiler. Develops 36 times air pressure employed. Color: White with chromium trim and Black base.........$120.00



Model PM-825 Overhead Service Outlet Assembly, including overhead swivel arm, 14-ft. service hose, Dual Range control valve and all necessary adapters...........$56.50

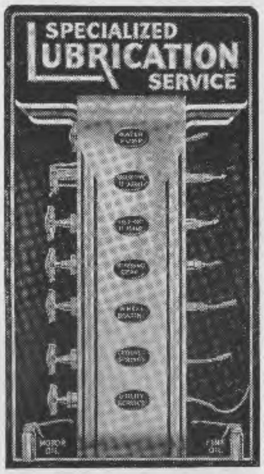
Model PM-600 Low Pressure Lubricant Supply Pump is used for supplying gear lubricants direct from original containers through lubricant supply lines to conveniently located service outlet assemblies . . . will handle any type of gear lubricant recommended by motor car manufacturers. Delivery approximately 12 pints of lubricant per minute at 2½ times air pressure employed. Finished in "Dulux Porcelaintone" same as above..............$79.50

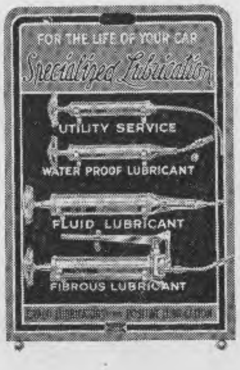
Model W-540 Lubrication Display Panel includes hand gun for the following specialized lubrication points:

- Water Pump
- Grease Type Universal Joint
- Oil Tight Universal Joint
- Steering Gear
- Wheel Bearings
- Metal Covered Springs
- Gear Case Suction

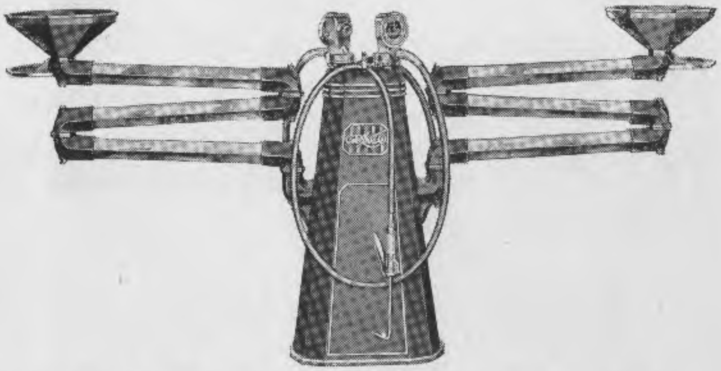
Complete as illustrated, $139.35

Model E-40 Easel for above, $10.50





Model W-210 Lubrication Panel, combination wall or easel type, complete with guns as shown $58.50



Model SL-4 Super Luber Assembly, includes two 10-ft. swivel drain arms and two accurately metered service outlets...$225.00

Suggested prices shown are subject to change without notice.

Alphabetical Tool Index

SUGGESTED PRICES

A

NAME	S. T. No.	Price	Page No.
Adapter—Gasoline Pump Pressure Gauge	923	1.40	20
Adapter—Gasoline Pump Pressure Gauge	924	1.40	20
Adapter—Jack	1427	5.00	★
Adapter—Steering Wheel Puller	1437	1.00	49
Adapter—Wheel Puller—$2\frac{1}{8}''$	1371	2.00	56
Adapter—Wheel Puller—$2\frac{13}{16}''$	1253	2.00	56
Adapter—Wheel Puller—$2\frac{1}{2}''$	1431	2.00	56
Adapter—Wheel Puller	5040	2.00	56
Adapter—Wheel Support Bushing Tool	10016	.55	20
Adapter Plate—Boring Bar—Price on Request	1426		25
Adjusting Tool—Brake Anchor Pin	852	1.00	8
Adjusting Tool—Spark Plug Gap	5083	.65	13
Adjusting Wrench—Brake	186	1.00	★
Adjusting Wrench—Differential Side Bearing	848	1.50	43
Airstrainer Cleaner	2021	12.75	72
Air Compressor—Price in Text		----	81
Aligning Bar—Transmission Countershaft	5043	2.00	51
Aligning Fixture—Clutch Plate	5004	7.50	11
Aligning Fixture—Connecting Rod	758	40.00	26
Aligning Gauge—Wheel Support Arm Bushing	5030	1.00	53
Aligning Tool—Oil Pump and Distributor Shaft	5082	2.40	39
Anchor Bolt Wrench—Brake	734	1.65	30
Anchor Bolt Wrench—Brake	847	2.70	8
Anchor Bolt Wrench—Brake	737	1.65	30
Arbor Plug—Connecting Rod Aligning Jig	886	4.00	★
Arbor Plug—Connecting Rod Aligning Jig—$2\frac{3}{32}''$	5056	6.00	★
Arbor Plug—Connecting Rod Aligning Jig—$2\frac{3}{32}''$	5024	4.00	26
Auto—Displa-lite	2017	3.75	82
Automatic Water Saver	979	2.50	79
Axle Shaft and Bearing Cup Puller	928	8.75	44
Axle Shaft Bearing Cup Puller Adapter	1442	1.75	43
Axle Shaft Bearing Cup Puller Adapter	1443	1.75	43
Axle Shaft Bearing Lubricator Sleeve	933	3.00	41
Axle Shaft Bearing Lubricator Sleeve	940	3.00	41
Axle Shaft Bearing Lubricator Sleeve	941	3.00	41
Axle Shaft Bearing Lubricator Sleeve	942	3.00	41
Axle Shaft Bearing Lubricator Sleeve	943	3.00	41
Axle Shaft Bearing Lubricator Sleeve	944	3.00	41
Axle Shaft Nut Wrench	849	2.90	43
Axle Shaft Nut Wrench	133	3.90	43
Axle Shaft Nut Wrench	748	2.90	43
Axle Shaft Nut Wrench	5000	2.40	43
Axle Shaft Oil Seal Drift	5050	1.25	43
Axle Shaft Oil Seal Removing Tool	5029	1.40	44
Axle Spring Clip Nut Wrench	786	2.85	60

B

NAME	S. T. No.	Price	Page No.
Ball Joint Puller—Steering Cross Tube	790	4.25	49
Ball Joint Puller—Steering Cross Tube	5058	4.95	50
Bar—Clutch Release Lever	5028	.85	12
Bar—Door Hinge Bending	5080	4.00	3
Bar—Door Hinge Riveting	5081	3.90	4
Bar—Pry	903	.75	43
Bar—Transmission Countershaft Aligning	5043	2.00	51
Battery Carrier	841	.40	13
Battery Filler	932	2.80	18
Battery Service Kit	997	3.75	18
Battery Tester—Batrometer No. 30	791	3.00	16
Battery Tester—Thermo Break—Not No. 40	963	1.25	16
Bearing Puller—Flywheel	5012	4.00	11
Bearing Puller—Flywheel	764	3.50	11
Body Cement Gun	968	1.80	3
Body Cement Gun Nozzle Tip	971	.65	3
Body, Frame and Fender Tools—Perfec-			79
Body Shimming Jack	967	10.50	4
Boring Bar	905	350.00	25
Boring Bar Adapter Plate—Price on Request	1426	----	25
Brake Adjusting Screw Wrench	845	.25	8
Brake Adjusting Wrench	186	1.00	★
Brake Anchor Bolt Wrench	847	2.70	8
Brake Anchor Bolt, Spark Plug and Thermometer Wrench—$\frac{3}{4}''$	734	1.65	30
Brake Anchor Bolt, Spark Plug and Thermometer Wrench—$\frac{5}{8}''$	737	1.65	30
Brake Anchor Pin Adjusting Tool	852	1.00?	8
Brake Bleeder Drain Assembly	5118	1.25	8
Brake Cylinder Hone	5136	15.00	9
Brake Cylinder Piston Clamp	5047	1.00	8
Brake Cylinder Plug Gauges—Set of Five	5137	4.90	9
Brake Drum Damper Spring Installing Tool	5093	2.25	10
Brake Master Cylinder Filler Plug Wrench	983	2.00	10
Brake Master Cylinder Refiller	5010	3.95	9
Brake Master Cylinder Refiller Holder	5108	.25	9
Brake Pedal Depressor	190	4.25	★
Brake Pressure Tank Assembly (With Wheels)	5035	21.50	10
Brake Pressure Tank Assembly (Without Wheels)	5110	18.50	10
Brake Shoe Spring Cup Lock Pliers	5077	1.50	8
Brake Tester—Four Wheel Model No. 5—Price on Request		----	71
Brake Tester—Two Wheel Model No. 1—L—Price on Request		----	71
Breaker Point Grinder	2002	1.85	16
Breaker Point Grinder Disc Set	1467	.30	16
Breaker Point Synchronizing Tool	907	1.25	14
Breaker Point Synchronizing Tool	913	9.25	15
Breaker Point Thickness Gauge	657	1.50	14
Breaker Point Wrench	632	.15	★
Breaker Point Wrench	868	.06	13
Bumper Bar End Bolt Cover Wrench	936	.25	60
Bumper Guide Studs (2)	880	1.00	★
Burnisher—Piston Pin Bushing	5008	5.00	30
Burnisher—Steering Gear Case Bushing	5117	10.00	49
Burnisher—Steering Knuckle Bushing	5046	7.50	56
Burnisher—Steering Knuckle Bushing	2006	10.00	56
Burnisher—Wheel Support Bushing	990	7.50	58
Bushing Reamer—Piston Pin—$\frac{3}{4}''$	833	7.75	29
Bushing Reamer—Piston Pin—$\frac{7}{8}''$	832	7.75	29
Bushing Tool—Spring Rear or Front Wheel Support	5049	5.50	53
Bushing Tool—Spring Rear Shackle	5048	3.25	46
Button Fastener—Upholstery—(Straight)	5097	3.40	6
Button Fastener—Upholstery—(Curved)	5098	.40	6

C

NAME	S. T. No.	Price	Page No.
Cable Connector Tip Crimping Tool—Head and Tail Lamp	957	8.50	18
Cable Terminal Crimping Tool—Ignition	946	3.25	15
Camber and Caster Gauge	873	9.00	58
Camshaft and Oil Pump Gear Mirror	896	1.50	★
Caps—Shop	819	.10	71
Carbon Brush—Flared Type	204	2.20	26
Carbon Brush	205	2.00	23
Carbon Brush—For Aluminum Head	953	2.00	23
Carbon Brush—For Aluminum Head—Flared Type	954	2.20	26
Carburetor Check Valve Wrench	10001	.65	22
Carburetor Economizer Valve Inspection Cover	5120	.70	22

A star (★) indicates that the tool listed is carried in stock but is not illustrated.

NOTE—Tool suggested prices marked with a question (?) mark are special prices and after the stock is exhausted will be made on a time and material basis.

All tool prices subject to change without notice.

Alphabetical Tool Index—*Continued*

NAME	S. T. No.	Price	Page No.
Carburetor Float Level Gauge	978	1.50	20
Carburetor Kit—Carter	5095	9.80	21
Carburetor Kit—Stromberg—Senior Cars	869	5.50	23
Carburetor Kit—Stromberg—Junior Cars	5007	3.15	22
Carburetor Kit—Stromberg—Additional Set	2027	3.65	21
Carburetor Kit—Stromberg—Complete Set	2028	10.95	21
Carburetor Main Jet Discharge Puller	10002	1.00	22
Carburetor Metering Jet Wrench	10000	.75	22
Carburetor Pump Seal Retainer Puller	5129	1.50	22
Carburetor Strainer Body Stud Socket Wrench	750	1.25	23
Carburetor Wrench Adjustable Handle	10003	.75	22
Carrier—Battery	841	.40	13
Chamfering Tool—Cylinder Bore	885	12.50	31
Change Speed Lever Cover	150	.15	6
Chisel and Punch Set	894	.60	60
Clamp—Brake Wheel Cylinder Piston (4)	5047	1.00	8
Clamp—Transmission Gear Ball Bearing.	5014	1.25	52
Cleaner—Valve Guide	212	1.40	29
Clip Expanding Tool—Radiator Shell Center Bar	937	2.50	40
Clip Expanding Tool—Radiator Shell Center Bar	960	5.00	40
Clip Nut Wrench—Front and Rear Axle Spring	786	2.85	60
Clutch Aligning and Release Lever Fixture	5004	7.50	11
Clutch Housing Shifter Relay Pivot Puller	5124	1.30	11
Clutch Release Lever Bar	5028	.85	12
Clutch Release Lever Wedge (3)	879	.70	32
Clutch Shaft Bearing Retaining Nut Wrench	914	8.75?	52
Clutch Shaft Flywheel Bearing Puller	764	3.50	11
Clutch Shaft Flywheel Bearing Puller	5012	4.00	11
Clutch Shaft Nut Spanner Wrench	836	1.50	12
Coat—Courtesy—Tan—Size 36	600	3.30	80
Coat—Courtesy—Tan—Size 38	601	3.30	80
Coat—Courtesy—Tan—Size 40	602	3.30	80
Coat—Courtesy—Tan—Size 42	603	3.30	80
Coat—Courtesy—Tan—Size 44	604	3.30	80
Coat—Courtesy—Tan—Size 46	605	3.60	80
Coat—Courtesy—Tan—Size 48	606	3.60	80
Coat—Courtesy—White—Size 36	350	3.30	80
Coat—Courtesy—White—Size 38	351	3.30	80
Coat—Courtesy—White—Size 40	352	3.30	80
Coat—Courtesy—White—Size 42	353	3.30	80
Coat—Courtesy—White—Size 44	354	3.30	80
Coat—Courtesy—White—Size 46	355	3.65	80
Coat—Courtesy—White—Size 48	356	3.65	80
Coil Tester—Koilster—Price on Request		----	65
Compressometer—Cylinder	193	4.50	23
Combustion Analyzer—Model G 30—Price on Request		---- ----	65
Compressor—Air—Price in Test		----	81
Compressor—Piston Ring	956	.85	31
Condenser Tester	945	9.15	16
Condenser Tester—4-Way—Price on Request		----	68
Connecting Rod Aligning Jig	758	40.00	26
Connecting Rod Aligning Jig Arbor Plug—2 3/32″	5056	6.00	★
Connecting Rod Aligning Jig Arbor Plug	886	4.00	★
Connecting Rod Aligning Jig Arbor Sleeve—2 3/32″	5024	4.00	26
Connecting Rod and Piston Assembling Pin	726	1.00	31
Connecting Rod Lock Nut Wrench	5127	1.15	26
Connecting Rod Nut Wrench—9/16″ Opening	191	1.60	27
Cover—Change Speed Lever	150	.15	6
Cover—Cowl	5064	1.40	6
Cover—Cowl	148	1.40	6
Cover—Cylinder Port Hole (2)	871	1.50	★
Cover—Door—Per Pair	146	3.00	6
Cover—Fender—Per Pair	130	5.95	6
Cover—Fender—Per Pair	5009	5.95	6
Cover—Front Seat	144	2.45	6
Cover—Headlight—Per Pair	5062	1.40	6
Cover—Headlight—Per Pair	834	1.40	6
Cover—Radiator	357	1.60	6
Cover—Seat	144	2.45	6

NAME	S. T. No.	Price	Page No.
Cover—Side Wheel	358	1.50	6
Cover—Side Wheel	5063	1.50	6
Cover—Steering Wheel	149	.55	6
Cover Centering Gauge—Timing Chain	5026	1.10	37
Cover Wrench—Bumper Rear End Bolt	936	.25	60
Crankcase Main and Connecting Rod Bearing Nut Wrench	192	1.75	27
Crankcase Main and Connecting Rod Bearing Nut Wrench	950	1.60	27
Crankcase Main Bearing and Valve Guide Puller	863	3.50	30
Crankcase Main Bearing Nut Wrench	721	1.75	27
Cranking Tool—Flywheel	801	2.75	★
Crank Pin Returning Tool	707	55.00	24
Crank Pin Returning Tool (Twin)	895	75.00	24
Crank Pin Returning Tool Cutter—1½″	1327	1.25	24
Crank Pin Returning Tool Cutter—1¼″	10031	1.25	24
Crank Pin Returning Tool Cutter—1 3/32″	1387	1.25	24
Crank Pin Returning Tool Cutter—1 7/32″	1329	1.25	24
Crank Pin Returning Tool Cutter—1⅜″	1328	1.25	24
Crankshaft Pulley and Sprocket Puller	113	4.75	26
Cut Off Cutter—Copper Tube	1385	3.00	60
Cutting Oil—Quart	706	.60	24
Cylinder Block and Radiator Flushing Tool	890	2.00	39
Cylinder Boring Bar	905	350.00	25
Cylinder Boring Bar Adapter Plate—Price on Request	1426	----	25
Cylinder Chamfering Tool	885	12.50	31
Cylinder Compressometer	193	4.50	23
Cylinder Filler Plug Wrench—Brake Master	983	2.00	10
Cylinder Grinder—Price on Request	2012	----	78
Cylinder Grinder—Self Lubricating	970	39.00	62
Cylinder Grinder Kerosene Drain Cup	904	4.00	29
Cylinder Grinder Kerosene Drain Cup	5075	4.75	36
Cylinder Grinder Kerosene Feed Can	655	3.45	★
Cylinder Grinder Stones—3⅜″	629	6.00	★
Cylinder Grinder Stones—3½″	630	6.00	★
Cylinder Grinder Stones—3½″	641	6.00	★
Cylinder Grinder Stones—3⅜″	642	6.00	★
Cylinder Grinder Stones—3½″	643	6.00	★
Cylinder Grinder Stones—3⅜″	644	6.00	★
Cylinder Grinder Stones—3 3/16″	713	6.00	★
Cylinder Head Lifter	121	1.50	29
Cylinder Head Nut Tension Indicating Wrench	999	17.50	31
Cylinder Head Nut Tension Indicating Wrench	2023	14.50	31
Cylinder Head Nut Tension Indicating Wrench	2024	9.75	31
Cylinder Head Nut Tension Indicating Wrench Extension	2001	1.30	31
Cylinder Head Nut Wrench—¾″ Opening	224	3.30	25
Cylinder Head Nut Wrench—⅝″ Opening	225	3.30	25
Cylinder Head Nut Wrench	908	1.65	35
Cylinder Head Stud Extractor	830	6.40	24
Cylinder Piston Clamp—Brake Wheel—(4)	5047	1.00	8
Cylinder Port Hole Cover (2) Twin	871	1.50	★
Cylinder Refiller—Brake Master	5010	3.95	9
Cylinder Refiller Holder—Brake Master	5108	.25	9

D

NAME	S. T. No.	Price	Page No.
Depressor—Brake Pedal	190	4.25	★
Differential Flange Replacing Tool	5113	2.25	41
Differential Flusher—Hot Oil—Price on Request		----	75
Differential Jack	858	8.50	61
Differential Jack Extension Cap	1427	5.00	★
Differential Pinion and Transmission Flange Nut Wrench	5084	3.50	42
Differential Pinion Flange Nut Wrench Socket	10033	1.10	42
Differential Pinion Setting Gauge	5044	4.85	42
Differential Pinion Shaft Bearing Puller	5088	10.00	41
Differential Side Bearing Adjusting Wrench	848	1.50?	43
Differential Side Bearing Puller	5086	8.50	42
Distrib-U-Scope—Model 857—Price on Request	2014	----	67

Alphabetical Tool Index—*Continued*

NAME	S. T. No.	Price	Page No.
Distrib-U-Scope—Model 859—Price on Request	2018	----	67
Distributor Bracket Ratchet Wrench and Screwdriver Socket	5125	2.30	13
Distributor Breaker Point Grinder	2002	1.85	16
Distributor Breaker Point Grinder Disc Set	1467	.30	16
Distributor Breaker Point Synchronizer	913	9.25	15
Distributor Breaker Point Synchronizer	907	1.25	14
Distributor Breaker Point Thickness Gauge	657	1.50	14
Distributor Breaker Point Wrench	632	.15	★
Distributor Breaker Point Wrench	868	.06	13
Distributor Housing Anchor Bolt Wrench	909	.55	36
Distributor Shaft Aligning Tool	5082	2.40	39
Distributor Syncrograph—Model E-136—Price on Request		----	65
Door Cover	146	3.00	6
Door Handle Spanner Wrench—Inside	829	1.80	3
Door Handle Spanner Wrench—Outside	949	1.40	4
Door Handle Spanner Wrench—Outside	891	1.80	4
Door Hinge Bending Bar	5080	4.00	3
Door Hinge Offset Screwdriver	5121	.80	7
Door Hinge Pin Bushing Extractor	10020	.75	5
Door Hinge Pin Bushing Replacer	10022	.50	5
Door Hinge Pin Expanding Reamer	10018	1.65	5
Door Hinge Pin Reamer Holder	10019	2.00	5
Door Hinge Pin Reamer Ratchet Wrench	100021	.50	5
Door Hinge Pin Reamer Set	5067	5.20	5
Door Hinge Pin Removing Pin	10035	.40	5
Door Hinge Pin Removing Tool	5068	6.00	5
Door Hinge Riveting Bar	5081	3.90	4
Drain Assembly—Brake Bleeder	5118	1.25	8
Drain Cup—Cylinder	5075	4.75	36
Drain Cup—Cylinder	904	4.00	29
Drift—Rear Axle Shaft Oil Seal	5050	1.25	43
Drift—Shock Absorber Ball Joint	811	3.75	79

E

NAME	S. T. No.	Price	Page No.
Ekonomist—Motor Tuner—Price on Request		----	68
Electro-Check—A-V-R—Price on Request		----	69
Equipment—Valve Seat Cutter	5060	13.25	★
Equipment—Valve Reseating (Less S.T. 5079, Valve Seat Ring Equipment)	5016	99.25	37
Equipment—Valve Seat Ring—(For installing Valve Seat)	5079	47.50	37
Exhaust and Inlet Manifold Socket Wrench	781	2.00	28
Exhaust Manifold Nut Wrench	176	.75	★
Exhaust Pipe Nut Wrench	763	1.15	30
Expander—Piston Ring	197	1.25	27
Expanding Tool—Radiator Shell Clip	937	2.50	40
Expanding Tool—Radiator Shell Clip	960	5.00	40
Extractor—Cylinder Head Stud	830	6.40	24
Extractor—Door Hinge Pin	10020	.75	5
Extractor—General Utility	831	8.25	35

F

NAME	S. T. No.	Price	Page No.
Feeler Gauge Holder	153	.60	34
Feeler Strip (.0015″)—Per Foot	646	.15	32
Feeler Strip (.002″)—Per Foot	647	.15	32
Feeler Strip (.003″)—Per Foot	166	.14	32
Feeler Strip (.004″)—Per Foot	167	.08	32
Feeler Strip (.005″)—Per Foot	648	.10	32
Feeler Strip (.006″)—Per Foot	697	.10	32
Feeler Strip (.007″)—Per Foot	5052	.10	32
Feeler Strip (.008″)—Per Foot	5054	.10	32
Feeler Strip (.009″)—Per Foot	5053	.10	32
Feeler Strip (.010″)—Per Foot	5061	.10	32
Feeler Strip (.015″)—Per Foot	962	.10	32
Feeler Strip (.020″)—Per Foot	969	.15	32
Feeler Strip (.040″)—Per Foot	5072	.35	32
Fender Covers—Per Pair	5009	5.95	6
Fender Covers—Per Pair	130	5.95	6
Fender Iron—Pneumatic—For Fender Bumping—Complete—Price on Request		----	83
Filler—Battery	932	2.80	18
Fitting Gauge and Scale—Piston	5034	1.35	36
Fixture—Clutch Aligning and Release Lever	5004	7.50	11
Flange Puller—Universal Joint	124	5.50?	50
Flaring Tool Complete—Copper Tube	768	7.00	60
Flaring Tool Cutter—Copper Tube	1385	3.00	60
Flaring Tool Only—Copper Tube	1384	3.00	60
Flock Gun—For Trunk Compartment	5131	2.95	6
Flusher—For Differential and Transmission—Price on Request		----	75
Flushing Equipment—Radiator and Cylinder	890	2.00	39
Flywheel Cranking Tool	801	2.75	★
Front Door Hinge Off-Set Screwdriver	5121	.80	7
Front Seat Cover	144	2.45	6
Front Wheel Support Arm Inner Pin Bushing Alignment Gauge	5030	1.00	53
Front Wheel Support Arm Inner Pin Bushing Removing and Replacing Tool	5021	1.50	54
Front Wheel Support Arm Outer Needle Bearing Bushing Removing and Replacing Tool	5031	.65	55
Front Wheel Support Bushing Tool	5049	5.50	53
Front Wheel Support Bushing Tool	5042	1.25	54

G

NAME	S. T. No.	Price	Page No.
Gasoline Line Frame Junction Wrench	783	1.00	27
Gasoline Mileage Tester	828	7.40	20
Gasoline Pump Pressure Gauge Adapter	924	1.40?	20
Gasoline Pump Pressure Gauge Adapter	923	1.40?	20
Gasoline Pump Pressure Gauge Assembly	917	5.00	20
Gasoline Pump Pressure Gauge Connection Assembly	10006	.65	20
Gasoline Tank Gauge Tester	2008	1.00	19
Gauge—Camber, Caster and King Pin	873	9.00	58
Gauge—Carburetor Float Level	978	1.50	20
Gauge—Differential Pinion Setting	5044	4.85	42
Gauge—Front Wheel Support Arm Bushing Alignment Gauge	5030	1.00	53
Gauge—Steering Crank Centering	5105	3.00	47
Gauge—Thickness	657	1.50	14
Gauge—Timing Chain Cover Centering	5026	1.10	37
Gauge—Tire	770	8.50	61
Gauge—Vacuum Test	5045	7.50	28
Gauge—Valve Depth	912	4.00	28
Gauge—Wheel—For Tramming Wheels	128	12.50	53
Gauge Holder—Feeler	153	.60	34
Gauge Scale—Piston Fitting	5034	1.35	36
Graphite Lubricating Gun	931	.75	7
Graphite Lubricating Gun Nozzle—(8″) For S.T. 931	1440	.15	★
Graphite Refill—For S.T. 931	1441	.50	★
Grinder—Cylinder—Self Lubricating	970	39.00	62
Grinder—Piston Pin Hole—Model "LB"—Price on Request		----	70
Grinder—Valve—Compressed Air	752	15.00	38
Gun—Nozzle Tip—Body Cement	971	.65	3

H

NAME	S. T. No.	Price	Page No.
Headlamp Cable Crimping Tool	957	8.50	18
Headlamp Covers—Per Pair	5062	1.40	6
Headlamp Covers—Per Pair	834	1.40	6
Headlamp Nut Wrench	747	3.50	★
Headlamp Nut Wrench	2019	2.00	16
Headlight Tester—(Robot)		99.50	74
Hinge Reaming Set—Door	5067	5.20	5
Hinge Riveting Bar—Door	5081	3.90	4
Hoist Rocker Jack—Hi-Boy—No. 700—Price on Request		----	76
Holders—Push Rod and Valve	5019	3.00	34
Horn Button Contact Screw Wrench	853	1.40	47
Hose Cutter—Rubber	2005	.75	71
Hub Cap Puller	976	2.40	52
Hub Cap Wrench	782	2.00	★
Hydraulic Brake Shoe Spring Cup Lock Pliers	5077	1.50	8
Hydraulic Jack—Model No. 783—Price on Request	788	----	76
Hydraulic Jack—Model No. 1000—Price on Request		----	77
Hydrometer—Radiator	753	4.50?	40

Alphabetical Tool Index—*Continued*

I

NAME	S. T. No.	Price	Page No.
Ignition Cable Terminal Crimping Tool	946	3.25	15
Ignition Point Grinder	2002	1.85	16
Ignition Point Grinder Disc Set	1467	.30	16
Ignition Switch and Door Handle Spanner Wrench	891	1.80	4
Ignition Timing Light	724	1.50	15
Ignition Timing Master	935	3.75	15
Indicator—Transmission Synchro-Mesh	837	11.00	50
Indicator—Valve Reseating	1409	13.50	35
Ink—For Vehicle Stamping Set	1463	.75	3
Inlet and Exhaust Manifold Nut Socket Wrench	781	2.00	28
Inlet and Exhaust Manifold Nut Wrench Socket Only	1391	1.45	28
Inlet and Exhaust Manifold Nut Wrench Socket Only	1470	1.50	28
Inside Door Handle Spanner Wrench	829	1.80	3
Instrument Board Indicator Light Inserter	5114	1.35	17
Instrument Board Headlight Switch Wrench	5089	.60	19
Instrument Board Reading Light and Starter Motor Switch Wrench	5111	2.20	17

J

NAME	S. T. No.	Price	Page No.
Jack—Body Shimming	967	10.50	4
Jack—Combination—Adjustable	155	4.50	61
Jack—Hydraulic—Model No. 783—Price on Request	788	----	76
Jack—Hydraulic—Model No. 1000—Price on Request		----	77
Jack—Lubricating Hoist Rocker—Hi-Boy No. 700—Price on Request		----	76
Jack—Motor	858	8.50	61
Jack Adapter—For S.T. 858	1427	5.00	★
Jig—Connecting Rod Aligning	758	40.00	26

K

NAME	S. T. No.	Price	Page No.
Kerosene Drain Cup—Cylinder Grinder	5075	4.75	36
Kerosene Drain Cup—Cylinder Grinder	904	4.00	29
Kerosene Feed Can—Cylinder Grinder	655	3.45	★
Key Inserter—Valve	864	2.00	32
Kit—Battery Service	997	3.75	18
Kit—Carter Carburetor	5095	9.80	21
Kit—Stromberg Carburetor—Senior Cars	869	5.50	23
Kit—Stromberg Carburetor—Junior Cars	5007	3.15	22
Kit—Stromberg Carburetor—Additional Set	2027	3.65	21
Kit—Stromberg Carburetor—Complete Set	2028	10.95	21

L

NAME	S. T. No.	Price	Page No.
Lacquer—For Stamping Set	1468	.50	3
Lamp Bulb Pliers	996	.70	17
Lamp Cable Tip Crimping Tool	957	8.50	18
Lever Cover—Change Speed	150	.15	6
Lift—Electric—Model No. 1052—Price on Request		----	72
Lift—Hydraulic—4 Post—Price on Request		----	73
Lift—Hydraulic—Model 10-AR—Price on Request		----	73
Lifter—Battery	841	.40	13
Lifter—Cylinder Head	121	1.50	29
Lifter—Radiator	838	3.50?	40
Lifter—Radiator	851	3.50?	40
Lifter—Radiator	5057	1.00	39
Lifter—Transmission	817	1.00	51
Lifter—Valve (12)	860	9.50	35
Lifter—Valve	5109	2.00	34
Lifter—Valve	223	5.00	★
Lifter—Valve	780	2.25	35
Lifter—Valve	5036	9.50	35
Light—Ignition Timing	724	1.50	15
Lock Reconditioning Set	965	3.50	5
Lock Ring Replacer—Valve Guide	867	3.50	30
Lubricating Equipment—Prices in Text		----	84
Lubricating Gun—Graphite	931	.75	7
Lubricating Gun Nozzle	1440	.15	★
Lubricating Gun Refill	1441	.50	★
Lubricating Hoist Rocker Jack No. 700—Hi-Boy—Price on Request		----	77
Lubricating System Test Tank	109	16.00	24
Lubricating System Test Tank Connection	1429	1.50	25
Lubricating Tool—Spring Cover	958	1.85	46

M

NAME	S. T. No.	Price	Page No.
Main and Connecting Rod Bearing Nut Wrench	192	1.75	27
Main Bearing Cap and Valve Guide Puller	863	3.50	30
Main Bearing Nut Wrench	721	1.75	27
Manifold Socket Wrench—Intake and Exhaust	781	2.00	28
Mechanic Pry Bar	903	.75	43
Mechanic's Suit—Tan—Size 36	660	3.70	80
Mechanic's Suit—Tan—Size 38	661	3.70	80
Mechanic's Suit—Tan—Size 40	662	3.70	80
Mechanic's Suit—Tan—Size 42	663	3.70	80
Mechanic's Suit—Tan—Size 44	664	3.70	80
Mechanic's Suit—Tan—Size 46	665	4.10	80
Mechanic's Suit—Tan—Size 48	666	4.10	80
Mechanic's Suit—White—Size 36	450	3.30	80
Mechanic's Suit—White—Size 38	451	3.30	80
Mechanic's Suit—White—Size 40	452	3.30	80
Mechanic's Suit—White—Size 42	453	3.30	80
Mechanic's Suit—White—Size 44	454	3.30	80
Mechanic's Suit—White—Size 46	455	3.60	80
Mechanic's Suit—White—Size 48	456	3.60	80
Mechanic's Tool Roll	612	3.10	73
Mileage Tester—Gasoline	828	7.40	20
Mirror—Camshaft and Oil Pump Gear	896	1.50	★
Motor Analyzer—Model 1000—Price on Request		----	66
Motor Tester—Model E-401—Price on Request		----	64
Motor Tuner—Model E—426—Price on Request		----	64
Motor Vitalizer—Price on Request		----	70
Motoscope	796	17.50	18

N

NAME	S. T. No.	Price	Page No.
Nozzle—Graphite Lubricating Gun	1440	.15	★
Nut Wrench—Brake Anchor Bolt and Thermometer—¾"	734	1.65	30
Nut Wrench—Brake Anchor Bolt and Thermometer—⅝"	737	1.65	30
Nut Wrench—Clutch Shaft Spanner	836	1.50	12
Nut Wrench—Clutch Shaft Bearing Retaining	914	8.75?	52
Nut Wrench—Connecting Rod	191	1.60	27
Nut Wrench—Crankcase Main Bearing	721	1.75	27
Nut Wrench—Crankcase Main and Connecting Rod Bearing	950	1.60	27
Nut Wrench—Crankcase Main and Connecting Rod Bearing	192	1.75	27
Nut Wrench—Cylinder Head	224	3.30	25
Nut Wrench—Cylinder Head	225	3.30	25
Nut Wrench—Cylinder Head	908	1.65	35
Nut Wrench—Cylinder Head Tension Indicating	999	17.50	31
Nut Wrench—Cylinder Head Tension Indicating	2023	14.50	31
Nut Wrench—Cylinder Head Tension Indicating	2024	9.75	31
Nut Wrench—Differential Side Bearing Adjusting	848	1.50?	43
Nut Wrench—Exhaust and Intake Manifold	781	2.00	28
Nut Wrench—Exhaust Manifold	176	.75	★
Nut Wrench—Front and Rear Axle Spring Clip	786	2.85	60
Nut Wrench—Gasoline Line Frame Junction	783	1.00	27
Nut Wrench—Headlight	2019	2.00	16

NAME	S. T. No.	Price	Page No.
Nut Wrench—Oil Pump Relief Valve Body	925	2.50	33
Nut Wrench—Piston Lubricator Valve and Exhaust Pipe	763	1.15	30
Nut Wrench—Radiator Tie Rod and Spring Bolt	821	2.25	40
Nut Wrench—Rear Axle Shaft	849	2.90	43
Nut Wrench—Rear Axle Shaft	748	2.90	43
Nut Wrench—Rear Axle Shaft	133	3.90	43
Nut Wrench—Rear Axle Shaft	5000	2.40	43
Nut Wrench—Spring Bolt	847	2.70	8
Nut Wrench—Steering Lever	5022	2.50	50
Nut Wrench—Valve Tappet	5104	1.00	33
Nut Wrench—Valve Tappet	216	1.00	★
Nut Wrench—Valve Tappet	5001	1.00	33
Nut Wrench—Vibration Damper	5106	1.30	38
Nut Wrench—Vibration Damper	947	3.50	37
Nut Wrench—Water Pump	805	1.30	33
Nut Wrench—Water Pump	878	1.30	★
Nut Wrench—Water Pump	5070	.80	33
Nut Wrench Extension—Cylinder Head Extension	2001	1.30	31

O

NAME	S. T. No.	Price	Page No.
Offset Screwdriver—Door Hinge	5121	.80	7
Offset Screwdriver—Shock Absorber	784	1.00	43
Oil—Cutting—Quart	706	.60	24
Oil Flusher—For Differential and Transmission—Price on Request		----	75
Oil Pump and Camshaft Gear Mirror	896	1.50	★
Oil Pump and Distributor Shaft Aligning Tool	5082	2.40	39
Oil Pump Pressure Relief Valve Body Nut Wrench	925	2.50	33
Oil Seal Assembly Removing Tool—Rear Axle Shaft	5029	1.40	44
Oil Seal Drift—Rear Axle Shaft	5050	1.25	43
Oil Test Connection	1429	1.50	25
Ornament Wrench—Radiator Shell	639	1.95	40
Outer Ball Joint Puller—Steering Cross Tube	790	4.25	49
Outer Bearing Cover Driver—Wheel Support	998	1.60	55
Outer Bearing Roller Inserter—Wheel Support Arm	5090	10.75	58
Outer Needle Bearing Bushing Removing and Replacing Tool—Wheel Support	986	1.35	55
Outer Needle Bearing Bushing Removing and Replacing Tool—Wheel Support	5031	.65	55
Outside Door Handle Spanner Wrench	891	1.80	4
Outside Door Handle Spanner Wrench	949	1.40	4

P

NAME	S. T. No.	Price	Page No.
Pad—For Vehicle Stamping Set	1464	.65	3
Pad—Tote	982	1.60	61
Paint Spray Finishing Outfit	2010	67.70	77
Patent Plate Stamping Set	2000	5.00	3
Pilot—Valve Seat Cutter—Special Taper 11/32″ Minus .001″	10007	1.25	37
Pilot—Valve Seat Cutter—Special Taper —11/32″ Standard	10008	1.25	37
Pilot—Valve Seat Cutter—Special Taper —11/32″ Plus .001″	10009	1.25	37
Pilot—Valve Seat Cutter—Special Taper —11/32″ Plus .002″	10010	1.25	37
Pin—Connecting Rod and Piston Assembling	726	1.00	31
Piston Fitting Gauge and Scale	5034	1.35	36
Piston Lubricator Valve and Exhaust Pipe Nut Wrench	763	1.15	30
Piston Pin Bushing Burnisher	5008	5.00	30
Piston Pin Bushing Reamer—3/4″ Pin	833	7.75	29
Piston Pin Bushing Reamer—7/8″ Pin	832	7.75	29
Piston Pin Bushing Reconditioning Set	5041	2.20	30
Piston Pin Hole Grinder—Price on Request		----	--
Piston Ring Compressor	956	.85	31
Piston Ring Expander	197	1.25	27
Plates—Turning Radius (2)	959	35.00	58
Pliers—Brake Shoe Spring Cup Lock	5077	1.50	8
Pliers—Lamp Bulb	996	.70	17
Pliers—Long Nose	785	1.25	27
Pliers—Water Pump Packing Nut	2026	1.30	33
Plier Set	966	1.40	17
Plug Wrench—Brake Master Cylinder	983	2.00	10
Plug Wrench—Rocker Lever Housing	866	1.00	34
Polishing Equipment—H.C.-5-2—Price on Request		----	62
Portable Press and Stand—Price on Request		----	79
Port Hole Cover—Cylinder (2)	871	1.50	★
Preloading Scale—Differential Bearing	5087	3.35	42
Pry Bar	903	.75	43
Puller—Clutch Shaft Flywheel Bearing	764	3.50	11
Puller—Clutch Shaft Flywheel Bearing	5012	4.00	11
Puller—Differential Pinion and Rear Axle Shaft Bearing	5088	10.00	41
Puller—Pivot Pin	5124	1.30	11
Puller—Rear Axle Shaft or Bearing Cup	928	8.75	44
Puller—Shock Absorber Connecting Link	790	4.25	49
Puller—Sprocket and Pulley	113	4.75	26
Puller—Steering Cross Tube Ball Joint	5058	4.95	50
Puller—Steering Cross Tube Ball Joint	790	4.25	49
Puller—Steering Lever	135	10.00	48
Puller—Steering Lever	5018	6.50	49
Puller—Steering Wheel	5033	6.50	48
Puller—Steering Wheel	938	4.95	48
Puller—Universal Joint Flange	124	5.50	50
Puller—Valve Guide	5038	4.25	28
Puller—Valve Guide and Main Bearing Cap	863	3.50	30
Puller—Vibration Damper	856	3.25	29
Puller—Vibration Damper	5002	2.75	33
Puller—Wheel—Heavy Duty—2 13/16″	123	6.10?	★
Puller—Wheel—Heavy Duty—(K and G) Less Adapters	955	17.50	55
Puller—Wheel	5073	4.40	54
Puller—Wheel	5074	13.75	54
Puller Adapter—Rear Axle Shaft	1442	1.75	43
Puller Adapter—Rear Axle Shaft	1443	1.75	43
Puller Adapter—Steering Wheel	1437	1.00	49
Puller Adapter—Wheel—2 1/8″	1371	2.00	56
Puller Adapter—Wheel—2 3/16″	1253	2.00	56
Puller Adapter—Wheel—2 1/2″	1431	2.00	56
Puller Jaw—Valve	1398	2.00	34
Punch and Anvil—For Valve Cover Gasket	744	1.50	38
Punch and Chisel Set	894	.60	60
Push Rod Holders—Set	5019	3.00	34
Push Rod Holders—Set	5103	4.00	34

R

NAME	S. T. No.	Price	Page No.
Rack—Valve	874	1.70	34
Radiator and Cylinder Flushing Tool	890	2.00	39
Radiator Cover	357	1.60	6
Radiator Drain Cock Wrench	5076	.80	40
Radiator Hydrometer	753	4.50?	40
Radiator Lifter	838	3.50?	40
Radiator Lifter	851	3.50?	40
Radiator Lifter	5057	1.00	39
Radiator Nut Wrench	5122	1.25	39
Radiator Shell Center Bar Clip Expanding Tool	937	2.50	40
Radiator Shell Center Bar Clip Expanding Tool	960	5.00	40
Radiator Shell Ornament Wrench	639	1.95	40
Radiator Test Tank Equipment	898	15.00	63
Radiator Tie Rod and Spring Bolt Nut Wrench	821	2.25	40
Radius Plates—Turning—(2)	959	35.00	58
Reamer—Door Hinge Pin	10018	1.65	5
Rearmer—Piston Pin Bushing—3/4″	833	7.75	29
Reamer—Piston Pin Bushing—7/8″	832	7.75	29
Reamer—Valve Guide	5051	2.50	32
Reamer—Valve Tappet Hole	5065	3.80	38
Reamer—Valve Tappet Hole	5101	4.50	38
Reamer Holder—Door Hinge Pin	10019	2.00	5
Reamer Ratchet Wrench—Door Hinge Pin	10021	.50	5
Reamer Set—Door Hinge Pin	5067	5.20	5

Alphabetical Tool Index—*Continued*

NAME	S. T. No.	Price	Page No.
Rear Axle Shaft Bearing Lubricator Sleeve	933	3.00	41
Rear Axle Shaft Bearing Lubricator Sleeve	940	3.00	41
Rear Axle Shaft Bearing Lubricator Sleeve	941	3.00	41
Rear Axle Shaft Bearing Lubricator Sleeve	942	3.00	41
Rear Axle Shaft Bearing Lubricator Sleeve	943	3.00	41
Rear Axle Shaft Bearing Lubricator Sleeve	944	3.00	41
Rear Axle Shaft Bearing Lubricator Sleeve	5100	4.00	41
Rear Axle Shaft Bearing Puller	5088	10.00	41
Rear Axle Shaft End Play Fixture	5112	3.00	41
Rear Axle Shaft Nut Wrench	849	2.90	43
Rear Axle Shaft Nut Wrench	133	3.90	43
Rear Axle Shaft Nut Wrench	748	2.90	43
Rear Axle Shaft Nut Wrench	5000	2.40	43
Rear Axle Shaft Oil Seal Drift	5050	1.25	43
Rear Axle Shaft Oil Seal Removing Tool	5029	1.40	44
Rear Axle Shaft or Bearing Cup Puller	928	8.75	44
Rear Axle Shaft or Bearing Cup Puller Adapter	1442	1.75	43
Rear Axle Shaft or Bearing Cup Puller Adapter	1443	1.75	43
Rear Axle Spring Clip Nut Wrench	786	2.85	60
Rear Bearing Cap and Valve Guide Puller	863	3.50	30
Replacing Tool—Differential Flange	5113	2.25	41
Replacing Tool—Shock Absorber Valve	5023	1.70	45
Riding Height Gauge	5141	1.80	★
Riveting Bar—Door Hinge	5081	3.90	4
Rocker Lever Holders (3)	879	.70	32
Rocker Lever Housing Plug Wrench	866	1.00	34
Rubber Dater—For Vehicle Stamping Set	1462	1.25	3
Rubber Stamp—For Vehicle Stamping Set	1461	1.50	3

S

NAME	S. T. No.	Price	Page No.
Scale—Differential Pinion Bearing Preloading	5087	3.35	42
Screw Driver—Horn Button Contact	853	1.40	47
Screw Driver—Neon Tube	916	.80	14
Screw Driver—Offset—Door Hinge	5121	.80	7
Screw Driver—Offset—Shock Absorber	784	1.00	43
Screw Driver Set—Phillips	2007	2.25	7
Seat Cover—Front	144	2.45	6
Service Kit—Battery	997	3.75	18
Set—Door Hinge Pin Reamer	5067	5.20	5
Shock Absorber Arm Rear Bushing Puller	975	3.00	45
Shock Absorber Ball Joint Wedge	811	3.75	79
Shock Absorber Camber Pilot Nut Wrench	2015	2.25	45
Shock Absorber Connecting Link Puller	790	4.25	49
Shock Absorber Cover Wrench	5005	1.50	45
Shock Absorber Fluid Gun	5119	2.40	45
Shock Absorber Valve Replacing Tool	5023	1.70	45
Shock Absorber Valve Stem Wrench	5107	1.10	44
Shop Cap	819	.10	71
Side Wheel Cover	358	1.50	6
Side Wheel Cover	5063	1.50	6
Sleeve—Connecting Rod Aligning Jig Arbor—2$\frac{3}{32}$″	5024	4.00	26
Sleeve—Rear Axle Shaft Bearing Lubricator	940	3.00	41
Sleeve—Rear Axle Shaft Bearing Lubricator	941	3.00	41
Sleeve—Rear Axle Shaft Bearing Lubricator	942	3.00	41
Sleeve—Rear Axle Shaft Bearing Lubricator	943	3.00	41
Sleeve—Rear Axle Shaft Bearing Lubricator	944	3.00	41
Sleeve—Rear Axle Shaft Bearing Lubricator	933	3.00	41
Sleeve—Rear Axle Shaft Bearing Lubricator	5100	4.00	41
Sleeve—Steering Gear Cross Shaft	5032	2.50	47
Spanner Wrench—Clutch Shaft Nut	836	1.50	12
Spanner Wrench—Differential Bearing	848	1.50?	43
Spanner Wrench—Door Handle—Inside	829	1.80	3
Spanner Wrench—Door Handle—Outside	949	1.40	4
Spanner Wrench—Ignition Switch and Outside Door Handle	891	1.80	4
Spark Plug Cleaner	897	5.50	75
Spark Plug Cleaner Compound	902	.35	75
Spark Plug Gap Adjusting Tool	5083	.65	13
Spark Plug Tester	859	5.00	★
Spark Plug Wrench	734	1.65	30
Spark Plug Wrench	737	1.65	30
Spring Bolt Nut Wrench	821	2.25	40
Spring Clip Nut Wrench—Front and Rear	786	2.85	60
Spring Cover Lubricating Tool	958	1.85	46
Spring Depressing Tool	5069	9.00	46
Spring Installing Tool—Brake Drum	5093	2.25	10
Spring Rear Front Bushing Tool	5049	5.50	53
Spring Rear Shackle Bushing Tool	5048	3.25	46
Spring Rear Shackle Bushing Tool	5096	2.65	46
Sprocket Puller	113	4.75	26
Stamping Set—Vehicle Plate	2000	5.00	3
Steering Crank Centering Gauge	5105	3.00	47
Steering Cross Tube Ball Joint Puller	790	4.25	49
Steering Cross Tube Ball Joint Puller	5058	4.95	50
Steering Gear Case Bushing Burnisher	5117	10.00	49
Steering Gear Case Bushing Replacer	5116	4.00	49
Steering Gear Cross Shaft Adjusting Nut Wrench	977	2.30	47
Steering Gear Cross Shaft Sleeve	988	1.75	47
Steering Knuckle Bushing Burnisher	5046	7.50	56
Steering Knuckle Bushing Line Reamer	5139	7.00	56
Steering Knuckle Bushing Removing and Replacing Tool	5039	.65	56
Steering Knuckle Spacer	5128	.80	56
Steering Lever Nut Wrench	5022	2.50	50
Steering Lever Puller	5018	6.50	49
Steering Lever Puller	135	10.00	48
Steering Wheel Cover	149	.55	6
Steering Wheel Puller	938	4.95	48
Steering Wheel Puller	5033	6.50	48
Steering Wheel Puller	5126	3.25	48
Steering Wheel Puller Adapter Nut	1437	1.00	49
Stud Driver and Remover	755	2.00	★
Stud Driver and Remover	5140	3.50	37
Stud Extractor—Cylinder Head	830	6.40	24
Stud Extractor Set	831	8.25	35
Synchrolamp—Price on Request		----	68
Synchronizer—Distributor	913	9.25	15
Synchronizer—Distributor	907	1.25	14
Syncrograph—Model E-136—Price on Request		----	65

T

NAME	S. T. No.	Price	Page No.
Tank—Brake Pressure—With Wheels	5035	21.50	10
Tank—Brake Pressure—Without Wheels	5110	18.50	10
Tappet Wrench	5104	1.00	33
Tappet Wrench	216	1.00	★
Tappet Wrench	5001	1.00	33
Tester—Condenser	945	9.15	16
Tester—Headlight—"Robot"		99.50	--
Test Tank—Lubrication System	109	16.00	24
Test Tank Connection—Lubrication System	1429	1.50	25
Test Tank Equipment—Radiator	898	15.00	63
Thermometer Nut Wrench	737	1.65	30
Thermometer Nut Wrench	734	1.65	30
Thickness Gauge	657	1.50	14
Tie Rod Wrench—Radiator	821	2.25	40
Timing Chain Cover Centering Gauge	5026	1.10	37
Timing Light—Ignition	724	1.50	15
Timing Master—Ignition	935	3.75	15
Tire Gauge	770	8.50	61
Tote Pan	982	1.60	61
Transmission Clutch Shaft Bearing Lock Ring Installing Tool	5013	1.50	51
Transmission Clutch Shaft Bearing Nut Wrench	914	8.75?	52
Transmission Countershaft Alignment Bar	5043	2.00	51
Transmission Flange Nut Wrench	5084	3.50	42
Transmission Flange Nut Wrench Socket	10032	1.00	42
Transmission Flusher—Hot Oil—Price on Request		----	75
Transmission Lifter	817	1.00	51
Transmission Overdrive Snap-Ring Pliers	5132	1.50	50
Transmission Second and Direct Speed Clutch Ring Gear Ball Bearing Clamp	5014	1.25	52

Alphabetical Tool Index—*Continued*

NAME	S. T. No.	Price	Page No.
Transmission Synchronizer Indicator	837	11.00	50
Tune Up Display Background—Price in Text		----	66
Turning Radius Plates (2)	959	35.00	58

U

NAME	S. T. No.	Price	Page No.
Universal Joint Flange Puller	124	5.50	50
Upholstery Button Fastener—Curved	5098	.40	6
Upholstery Button Fastener—Straight	5097	3.40	6
Upper Bushing Removing and Replacing Tool—Wheel Front Support	5042	1.25	54
Upper Bushing Removing and Replacing Tool—Wheel Front Support	5049	5.50	53
Utility Extractor—General	831	8.25	35

V

NAME	S. T. No.	Price	Page No.
Vacuum Cleaner—Model VC-100		87.50	--
Vacuum Test Gauge	5045	7.50	28
Valve Cover Punch and Anvil	744	1.50	38
Valve Depth Gauge	912	4.00	28
Valve Grinder—Compressed Air	752	15.00	38
Valve Guide Cleaner	212	1.40	29
Valve Guide Counterboring Tool	5123	1.30	32
Valve Guide Lock Ring Replacer	867	3.50	30
Valve Guide Puller and Replacer	863	3.50	30
Valve Guide Puller and Replacer	5038	4.25	28
Valve Guide Reamer	5051	2.50	32
Valve Key Inserter	864	2.00	32
Valve Lifter	223	5.00	★
Valve Lifter	5109	2.00	34
Valve Lifter	5036	9.50	35
Valve Lifter—Heavy Duty	780	2.25	35
Valve Lifter—(Twin)	860	9.50	35
Valve Puller Jaw—For Use with S.T. 863	1398	2.00	34
Valve Push Rod Holders—Per Set	5019	3.00	34
Valve Push Rod Holders—Per Set	5103	8.00	34
Valve Rock—Twin (2)	874	1.70	34
Valve Refacer—Model AR		99.00	78
Valve Reseating Equipment (Less S.T. 5079, Valve Seat Ring Installing Equipment)	5016	99.25	37
Valve Rocker Lever Holders (3)	879	.70	32
Valve Rocker Lever Housing Plug Wrench	866	1.00	34
Valve Seat Cutter Equipment—(To Bring S.T. 669 or S.T. 952 Up to Date)	5060	13.25	★
Valve Seat Cutter Pilot—Special Taper—11/32″ Minus .001″	10007	1.25	37
Valve Seat Cutter Pilot—Special Taper—11/32″ Standard	10008	1.25	37
Valve Sear Cutter Pilot—Special Taper—11/32″ Plus .001″	10009	1.25	37
Valve Seat Cutter Pilot—Special Taper—11/32″ Plus .002″	10010	1.25	37
Valve Seat Cutter Sleeve	10013	1.75	37
Valve Seat Cutter Sleeve Wrench and Handle	10014	.50	37
Valve Seat Finishing Cutter (45°)—1½″	10011	3.00	37
Valve Seat Finishing Cutter (30°)—1 9/16″	10012	3.00	37
Valve Seat Indicator	1409	13.50	35
Valve Seat Replacement Seat—1⅞″	1230	.35	★
Valve Seat Replacement Seat—1¾″	1231	.35	★
Valve Seat Replacement Seat—1 9/16″	1353	.35	★
Valve Seat Replacement Seat—1 11/16″	10024	.35	★
Valve Seat Ring Installing Equipment—For Installing New Valve Seats	5079	47.50	37
Valve Service Cabinet and Tools—Price on Request		----	82
Valve Spring Tester	948	35.00	60
Valve Tappet Feeler Gauge Holder	153	.60	34
Valve Tappet Hole Reamer	5065	3.80	38
Valve Tappet Hole Reamer	5101	4.50	38
Valve Tappet Wrench	5001	1.00	33
Valve Tappet Wrench	216	1.00	★
Valve Tappet Wrench	5104	1.00	33
Vehicle Plate Stamping Set	2000	5.00	3
Vibration Damper Nut Wrench	947	3.50	37
Vibration Damper Nut Wrench	5106	1.30	38
Vibration Damper Nut Wrench	855	3.00	★
Vibration Damper Puller	5002	2.75	33
Vibration Damper Puller	856	3.25	29
Voltmeter—Price on Request		----	68

W

NAME	S. T. No.	Price	Page No.
Water Pump Packing Nut Pliers	2026	1.30	33
Water Pump Packing Nut Wrench—1½″	805	1.30	33
Water Pump Packing Nut Wrench—1 7/16″	878	1.30	★
Water Pump Packing Nut Wrench	5070	.80	33
Wedge—Shock Absorber Ball Joint	811	3.75	79
Wee-Gee Board	961	37.50	56
Wheel Aligner—No. WR-20—Price on Request		----	75
Wheel Balancer—No. 54 DS—Price on Request		----	76
Wheel Cover—Side Wheel	358	1.50	6
Wheel Cover—Side Wheel	5063	1.50	6
Wheel Cover—Steering	149	.55	6
Wheel Gauge—For Tramming Wheels	128	12.50	53
Wheel Hub Cap Puller	976	2.40	52
Wheel Puller	5073	4.40	54
Wheel Puller	5074	13.75	54
Wheel Puller—Heavy Duty	123	6.10?	★
Wheel Puller—Heavy Duty—Less Adapters	955	17.50	55
Wheel Puller—Steering	938	4.95	48
Wheel Puller—Steering	5033	6.50	48
Wheel Puller Adapter	5040	2.00	56
Wheel Puller Adapter—2⅛″	1371	2.00	56
Wheel Puller Adapter—2 13/16″	1253	2.00	56
Wheel Puller Adapter—2½″	1431	2.00	56
Wheel Puller Adapter—Steering	1437	1.00	49
Wheel Steering Knuckle Bushing Burnisher	5046	7.50	56
Wheel Steering Knuckle Bushing Burnisher	2006	10.00	56
Wheel Steering Knuckle Bushing Removing and Replacing Tool	5039	.65	56
Wheel Support Arm and Outer Needle Bearing Bushing Removing and Replacing Tool	5031	.65	55
Wheel Support Arm and Outer Needle Bearing Bushing Removing and Replacing Tool	986	1.35	55
Wheel Support Arm Inner Pin Bushing Aligner	987	1.80	53
Wheel Support Arm Inner Pin Bushing Aligner	5102	1.00	53
Wheel Support Arm Inner Pin Bushing Aligner	5030	1.00	53
Wheel Support Arm Inner Pin Bushing Removing and Replacing Tool	5021	1.50	54
Wheel Support Arm Inner Pin Bushing Removing and Replacing Tool	989	1.25	54
Wheel Support Arm Inner Pin Bushing Sleeve	5099	1.50	53
Wheel Support Arm Inner Pin Bushing Sleeve	2003	1.50	53
Wheel Support Arm Outer Bearing Cover Driver	998	1.60	55
Wheel Support Arm Outer Bearing Roller Inserter	5090	10.75	58
Wheel Support Arm Outer Pin Pilot	5092	1.50	55
Wheel Support Bushing Burnisher	990	7.50	58
Wheel Support Upper Bushing Removing and Replacing Tool	5042	1.25	54
Wheel Support Upper Bushing Removing and Replacing Tool	5049	5.50	53
Windshield Wiper Socker Wrench	5037	1.60	4
Wood Box—For Stamping Set	1465	.35	3

Numerical Index

SUGGESTED PRICES

S. T. No.	Illustration Page No.	Price
109	24	$16.00
113	36	4.75
121	29	1.50
123	★	6.10?
124	50	5.50
128	53	12.50
130	6	5.95
133	43	3.90
135	48	10.00
144	6	2.45
146	6	3.00
148	6	1.40
149	6	.55
150	6	.15
153	34	.60
155	61	4.50
166	32	.14
167	32	.08
176	★	.75
186	★	1.00
190	★	4.25
191	27	1.60
192	27	1.75
193	23	4.50
197	27	1.25
204	26	2.20
205	22	2.00
212	29	1.40
216	★	1.00
223	★	5.00
224	25	3.30
225	25	3.30
350	80	3.30
351	80	3.30
352	80	3.30
353	80	3.30
354	80	3.30
355	80	3.65
356	80	3.65
357	6	1.60
358	6	1.50
450	80	3.30
451	80	3.30
452	80	3.30
453	80	3.30
454	80	3.30
455	80	3.60
456	80	3.60
600	80	3.30
601	80	3.30
602	80	3.30
603	80	3.30
604	80	3.30
605	80	3.60
606	80	3.60
612	73	3.10
629	★	6.00
630	★	6.00
632	★	.15
639	40	1.95
641	★	6.00
642	★	6.00
643	★	6.00
644	★	6.00
646	32	.15
647	32	.15
648	32	.10
655	★	3.45
657	14	1.50
660	80	3.70
661	80	3.70
662	80	3.70
663	80	3.70
664	80	3.70
665	80	4.10
666	80	4.10
697	32	.10
706	24	.60
707	24	55.00
713	★	6.00
721	27	1.75
724	15	1.50
726	31	1.00
734	30	1.65
737	30	1.65
744	38	1.50
747	★	3.50
748	43	2.90
750	23	1.25
751	22	Prices on Request
752	38	15.00
753	40	4.50
755	★	2.00
758	26	40.00
763	30	1.15
764	11	3.50
768	60	7.00
770	61	8.50
780	35	2.25
781	28	2.00
782	★	2.00
783	27	1.00
784	43	1.00
785	27	1.25
786	60	2.85
788	76	Prices on Request
790	49	4.25
791	16	3.00
796	18	17.50
801	★	2.75
805	33	1.30
811	79	3.75
817	51	1.00
819	71	.10
821	40	2.25
828	20	7.40
829	3	1.80
830	24	6.40
831	35	8.25
832	29	7.75
833	29	7.75
834	6	1.40
836	12	1.50
837	50	11.00
838	40	3.50?
841	13	.40
845	8	.25
847	8	2.70
848	43	1.50?
849	43	2.90
851	40	3.50?
852	8	1.00?
853	47	1.40
855	★	3.00
856	29	3.25
858	61	8.50
859	★	5.00
860	35	9.50
863	30	3.50
864	32	2.00
866	34	1.00
867	30	3.50
868	13	.06
869	23	5.50
871	★	1.50
873	58	9.00
874	34	1.70
878	★	1.30
879	32	.70
880	★	1.00
885	31	12.50
886	★	4.00?
890	39	2.00
891	4	1.80
894	60	.60
895	24	75.00
896	★	1.50
897	75	5.50
898	63	15.00
902	75	.35
903	43	.75
904	29	4.00
905	25	350.00
907	14	1.25
908	35	1.65
909	36	.55
912	28	4.00
913	15	9.25
914	52	8.75?
916	14	.80
917	20	5.00
923	20	1.40?
924	20	1.40?
925	33	2.50
928	44	8.75
931	7	.75
932	18	2.80
933	41	3.00
935	15	3.75
936	60	.25
937	40	2.50
938	48	4.95
940	41	3.00
941	41	3.00
942	41	3.00
943	41	3.00
944	41	3.00
945	16	9.15
946	15	3.25
947	37	3.50
948	60	35.00
949	4	1.40
950	27	1.60
953	23	2.00
954	26	2.20
955	55	17.50
956	31	.85
957	18	8.50
958	46	1.85
959	58	35.00
960	40	5.00
961	56	37.50
962	32	.10
963	16	1.25
965	5	3.50
966	17	1.40
967	4	10.50
968	3	1.80
969	32	.15
970	62	39.00
971	3	.65
975	45	3.00
976	52	2.40
977	47	2.30
978	20	1.50
979	79	2.50
982	61	1.60
983	10	2.00
986	55	1.35
987	53	1.80
988	47	1.75
989	54	1.25
990	58	7.50
996	17	.70
997	18	3.75
998	55	1.60
999	31	17.50
1230	★	.35
1231	★	.35
1253	56	2.00
1327	24	1.25
1328	24	1.25
1329	24	1.25
1353	★	.35
1371	56	2.00
1384	60	3.00
1385	60	3.00
1387	24	1.25
1391	28	1.45
1398	34	2.00
1409	35	13.50
1426	25	Prices on Request
1427	★	5.00
1429	25	1.50
1431	56	2.00
1437	49	1.00
1440	★	.15
1441	★	.50
1442	43	1.75
1443	43	1.75
1461	3	1.50
1462	3	1.25
1463	3	.75
1464	3	.65
1465	3	.35
1467	16	.30
1468	3	.50
1470	28	1.50
2000	3	5.00
2001	31	1.30
2002	16	1.85
2003	53	1.50
2005	71	.75
2006	56	10.00
2007	7	2.25
2008	19	1.00
2010	77	67.70
2012	78	Prices on Request
2014	67	Prices on Request
2015	45	2.25
2017	82	3.75
2018	67	Prices on Request
2019	16	2.00
2021	72	12.75
2023	31	14.50
2024	31	9.75
2026	33	1.30
2027	21	3.65
2028	21	10.95
5000	43	2.40
5001	33	1.00
5002	33	2.75
5004	11	7.50
5005	45	1.50
5007	22	3.15
5008	30	5.00
5009	6	5.95
5010	9	3.95
5012	11	4.00
5013	51	1.50
5014	52	1.25
5016	37	99.25
5018	49	6.50
5019	34	3.00
5021	54	1.50
5022	50	2.50
5023	45	1.70
5024	26	4.00
5026	37	1.10
5028	12	.85
5029	44	1.40
5030	53	1.00
5031	55	.65
5032	47	2.50
5033	48	6.50
5034	36	1.35
5035	10	21.50
5036	35	9.50
5037	4	1.60
5038	28	4.25
5039	56	.65
5040	56	2.00
5041	30	2.20
5042	54	1.25
5043	51	2.00
5044	42	4.85
5045	28	7.50
5046	56	7.50
5047	8	1.00
5048	46	3.25
5049	53	5.50
5050	43	1.25
5051	32	2.50
5052	32	.10
5053	32	.10
5054	32	.10
5056	★	6.00
5057	39	1.00
5058	50	4.95
5060	★	13.25
5061	32	.10
5062	6	1.40
5063	6	1.50
5064	6	1.40
5065	38	3.80
5067	5	5.20
5068	5	6.00
5069	46	9.00
5070	33	.80
5072	32	.35
5073	54	4.40
5074	54	13.75
5075	36	4.75
5076	40	.80
5077	8	1.50
5079	37	47.50
5080	3	4.00
5081	4	3.90
5082	39	2.40
5083	13	.65
5084	42	3.50
5086	42	8.50
5087	42	3.35
5088	41	10.00
5089	19	.60
5090	58	10.75
5092	55	1.50
5093	10	2.25
5095	21	9.80
5096	46	2.65
5097	6	3.40
5098	6	.40
5099	53	1.50
5100	41	4.00
5101	38	4.50
5102	53	1.00
5103	34	8.00
5104	33	1.00
5105	47	3.00
5106	38	1.30
5107	44	1.10
5108	9	.25
5109	34	2.00
5110	10	18.50
5111	17	2.20
5112	41	3.00
5113	41	2.25
5114	17	1.35
5116	49	4.00
5117	49	10.00
5118	8	1.25
5119	45	2.40
5120	22	.70
5121	7	.80
5122	39	1.25
5123	32	1.30
5124	11	1.30
5125	13	2.30
5126	48	3.25
5127	26	1.15
5128	56	.80
5129	22	1.50
5131	6	2.95
5132	50	1.50
5136	9	15.00
5137	9	4.90
5139	56	7.00
5140	37	3.50
5141	★	1.80
10000	22	.75
10001	22	.65
10002	22	1.00
10003	22	.75
10006	20	.65
10007	37	1.25
10008	37	1.25
10009	37	1.25
10010	37	1.25
10011	37	3.00
10012	37	3.00
10013	37	1.75
10014	37	.50
10016	20	.55
10018	5	1.65
10019	5	2.00
10020	5	.75
10021	5	.50
10022	5	.50
10024	★	.35
10031	24	1.25
10032	42	1.00
10033	42	1.10
10035	5	.40

A star (★) indicates that the tool listed is carried in stock but is not illustrated.

NOTE—Tool suggested prices marked with a question (?) mark are special prices and after the stock is exhausted will be made on a time and material basis.

All tool prices subject to change without notice.